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THE SOUTHERN AGRICULTURIST.

(NEW SERIES.)

Vol. II. FOR OCTOBER, 1842. No. 10.

ON MANURES.

Extracted from Prof. Liebig's "Organic Chemistry."

(Concluded from page 457.)

We have now considered all that is requisite in a soil, in order to furnish its plants with the materials necessary for the formation of the woody fibre, the grain, the roots, and the stem, and now proceed to the consideration of the most important object of agriculture, viz. the production of nitrogen in a form capable of assimilation,—the production, therefore, of substances containing this element. The leaves, which nourish the woody matter, the roots, from which the leaves are formed, and which prepare the substances for entering into the composition of the fruit, and, in short, every part of the organism of a plant, contain azotized matter in very varying proportions, but the seeds and roots are always particularly rich in them.

Let us now examine in what manner the greatest possible production of substances containing nitrogen can be affected. Nature, by means of the atmosphere, furnishes nitrogen to a plant in quantity sufficient for its normal growth. Now its growth must be considered as normal, when it produces a single seed, capable of reproducing the same plant in the following year. Such a normal condition would suffice for the existence of plants, and prevent their extinction, but they do not exist for themselves alone; the greater number of animals depend on the vegetable world for food, and by a wise adjustment of nature, plants have the remarkable power of converting, to a certain degree, all the nitrogen offered to them into nutriment for animals.

We may furnish a plant with carbonic acid, and all the materials which it may require, we may supply it with humus in the most abundant quantity, but it will not attain complete developement unless nitrogen is also afforded to it; an herb will be formed, but no grain; even sugar and starch may be produced, but no gluten.

But when we give a plant nitrogen in considerable quantity, we enable it to attract with greater energy, from the atmosphere, the carbon which is necessary for its nutrition, when that in the soil is not sufficient; we afford to it a means of fixing the carbon of the atmosphere in its organism.

We cannot ascribe much of the power of the excrement of black cattle, sheep, and horses, to the nitrogen which they contain,

for its quantity is two minute. But that contained in the fæces of man is proportionably much greater, although by no means constant. In the fæces of the inhabitants of towns, for example, who feed on animal matter, there is much more of this constituent than in those of peasants, or of such people as reside in the country. The fæces of those who live principally on bread and potatoes are similar in composition and properties to those of animals.

All excrements have in this respect a very variable and relative value. Thus, those of black cattle and horses, are of great use on soils consisting of lime and sand which contain no silicate of potash and phosphates, whilst their value is much less when applied to soils formed of argillaceous earth, basalt, granite, porphyry, clinkstone, and even mountain limestone, because all these contain potash in considerable quantity. In such soils human excrements are extremely beneficial, and increase their fertility in a remarkable degree; they are, of course, as advantageous for other soils also; but for the manure of those first mentioned, the excrements of other animals are quite indispensable.

We possess only one other source of manure which acts by its nitrogen, besides the fæces of animals,—namely, the urine of man and animals.

Urine is employed as manure either in the liquid state, or with the fæces which are impregnated with it. It is the urine contained in them which gives to the solid fæces the property of emitting ammonia, a property which they themselves possess only in a very slight degree.

When we examine what substances we add to a soil by supplying it with urine, we find that this liquid contains in solution ammoniacal salts, uric acid,(a substance containing a large quantity of nitrogen,) and salts of phosphoric acid.

According to *Berzelius* 1000 parts of human urine contain:—

Urea,	30.10
Free Lactic acid*, Lactate of ammonia, and animal matter not separable from them,	17.14
Uric Acid,	1.00
Mucus of the bladder,	0.32
Sulphate of Potash,	3.71
Sulphate of Soda,	3.16
Phosphate of Soda,	2.94
Phosphate of Ammonia,	1.65
Chloride of Sodium,	4.45
Muriate of Ammonia,	1.50
Phosphate of Magnesia and Lime,	1.00
Siliceous earth,	0.03
Water,	933.00
	1000.00

*Lactic acid has been found in most animal fluids and in several plants. It was first obtained from sour milk, hence its name from the Latin *lac*, milk.

If we substract from the above the urea, lactate of ammonia, free lactic acid, uric acid, the phosphate and muriate of ammonia, 1 per cent. of solid matter remains, consisting of inorganic salts, which must possess the same action when brought on a field, whether they are dissolved in water or in urine. Hence the powerful influence of urine must depend upon its other ingredients, namely, the urea and ammoniacal salts. The urea in human urine exists partly as lactate of urea, and partly in a free state. *(Henry.)* Now when urine is allowed to putrefy spontaneously, that is, to pass into that state in which it is used as manure, all the urea in combination with lactic acid is converted into lactate of ammonia, and that which was free into volatile carbonic of ammonia.

In dung-reservoirs well constructed and protected from evaporation, this carbonic of ammonia is retained in the state of solution, and when the putrefied urine is spread over the land, a part of the ammonia will escape with the water which evaporates, but another portion will be absorbed by the soil, if it contains either alumina or iron; but in general, only the muriate, phosphate, and lactate of ammonia remain in the ground It is these alone, therefore, which enable the soil to exercise a direct influence on plants during the progress of their growth, and not a particle of them escapes being absorbed by the roots.

On account of the formation of this carbonic of ammonia, the urine becomes alkaline, although it is acid in its natural state. When it is lost by being volatilized in the air, which happens in most cases, the loss suffered is nearly equal to one half of the weight of the urine employed, so that if we fix it, that is, if we deprive it of its volatility, we increase its action twofold. The existence of carbonate of ammonia in putrefied urine long since suggested the manufacture of sal ammoniac from this material. When the latter salt possessed a high price, this manufacture was even carried on by the farmer. For this purpose the liquid obtained from dung-hills was placed in vessels of iron, and subjected to distillation; the product of this distillation was converted into muriate of ammonia by the common method. *(Demachy.)* But it is evident that such a thoughtless proceeding must be wholly relinquished, since the nitrogen of 100 lbs. of sal-ammoniac (which contains 26 parts of nitrogen) is equal to the quantity of nitrogen contained in 1200 lbs. of the grain of wheat, 1480 lbs. of that of barley, or 2755 lbs. of hay. *(Boussingault.)*

The carbonate of ammonia formed by the putrefaction of urine, can be fixed or deprived of its volatility in many ways.

If a field be strewed with gypsum, and then with putrefied urine or the drainings of dung-hills, all the carbonate of ammonia will be converted into the sulphate which will remain in the soil.

But there are still simpler means of effecting this purpose;—gypsum, chloride of calcium, sulphuric or muriatic acid, and superphosphate of lime, are all substances of a very low price, and

completely neutralize the urine, converting its ammonia into salts which posess no volatility.

If a bason filled with concentrated muriatic acid is placed in a common necessary, so that its surface is in free communication with the vapors which arise from below, it becomes filled after a few days with crystals of muriate of ammonia. The ammonia, the presence of which the organs of smell amply testify, combines with the muriatic acid and loses entirely its volatility, and thick clouds or fumes of the salt newly formed hang over the basin. In stables the same may be seen. The ammonia that escapes in this manner, is not only entirely lost as far as our vegetation is concerned, but it works also a slow, though not less certain destruction of the walls of the building. For when in contact with the lime of the mortar, it is converted into nitric acid, which gradually dissolves the lime. The injury thus done to a building by the formation of the soluble nitrates has received (in Germany) a special name—*salpeterfras.*

The ammonia emitted from stables and necessaries is always in combination with carbonic acid. Carbonate of ammonia and sulphate of lime (gypsum) cannot be brought together at common temperatures, without mutual decomposition. The ammonia enters into combination with the sulphuric acid, and the carbonic acid with the lime, forming compounds which are not volatile, and, consequently, destitute of all smell. Now if we strew the floors of our stables, from time to time, with common gypsum, they will lose all their offensive smell, and none of the ammonia which forms can be lost, but will be retained in a condition serviceable as manure.

With the exception of urea, uric acid contains more nitrogen than any other substance generated by the living organism; it is soluble in water, and can be thus absorbed by the roots of plants, and its nitrogen assimilated in the form of ammonia, and of the oxalate, hydrocyanate, or carbonate of ammonia.

It would be extremely interesting to study the transformations which uric acid suffers in a living plant. For the purpose of experiment, the plant should be made to grow in charcoal powder. previously heated to redness, and then mixed with pure uric acid. The examination of the juice of the plant, or of the component parts of the seed or fruit, would be a means of easily detecting the differences.

In respect to the quantity of nitrogen contained in excrements, 100 parts of the urine of a healthy man are equal to 1300 parts of the fresh dung of a horse, according to the analyses of *Macaire* and *Marcet*, and to 600 parts of those of a cow. Hence it is evident that it would be of much importance to agriculture if none of the human urine were lost. The powerful effects of urine as a manure are well known in Fanders, but they are considered invaluable by the Chinese, who are the oldest agricultural people we know. Indeed so much value is attached to the influence of

human excrements by these people, that laws of the state forbid that any of them should be thrown away, and reserviours are placed in every house, in which they are collected with the greatest care. No other kind of manure is used for their corn fields.

China is the birthplace of the experimental art; the incessant striving after experiments has conducted the Chinese a thousand years since to discoveries, which have been the envy and admiration of Europeans for centuries, especially in regard to dyeing and painting, and to the manufactures of porcelain, silk, and colors for painters. These we were long unable to imitate, and yet they were discovered by them without the assistence of scientific principles; for in the books of the Chinese we find receipes and directions for use, but never explanations of processes.

Half a century sufficed to Europeans, not only to equal but to surpass the Chinese in the arts and manufactures, and this was owing merely to the application of correct principles deduced from the study of chemestry. But how infinitely inferior is the agriculture of Europe to that of China! The Chinese are the most admirable gardeners and trainers of plants, for each of which they understand how to prepare and apply the best adapted manure. The agriculture of their country is the most perfect in the world; and there, where the climate in the most fertile districts differs little from the European, very little value* is attach to the excrements

* Davis, in his *History of China*, states that every substance convertable into manure is diligently husbanded. "The cakes that remain after the expression of their vegetable oils, horns and hoofs reduced to powder, together with soot and ashes, and the contents of common sewers are much used. The plaster of old kitchens, which in China have no chimneys, but an opening at the top, is much valued: so that they will sometimes put new plaster on a kitchen for the sake of the old. All sorts of hair are used as manure, and barber's shavings are carefully appropriated to that purpose. The annual produce must be considerable, in a country where some hundred millions of heads are kept constantly shaved. Dung of all animals, but more especially night-soil, is esteemed above all others. Being sometimes formed into cakes, it is dried in the sun, and in this state becomes an object of sale to farmers, who dilute it previous to use. They construct large cisterns or pits lined with lime plaster, as well as earthen tubs sunk in the ground, with straw over them to prevent evaporation, in which all kinds of vegetable and animal refuse are collected. These being diluted with a sufficient quantity of liquid, are left to undergo the putrefactive fermentation, and then applied to the land."

"In the case of every thing except rice, the Chinese seem to manure rather the plant itself than the soil, supplying it copiously with their liquid preparations.

"The Chinese husbandman," observes Sir G. Staunton (*Embassy*, Vol. II., p. 476.) "always steeps the seeds he intends to sow in liquid manure, until they swell, and germination begins to appear, which, experience has taught him, will have the effect of hastening the growth of plants, as well as of defending them against the insects hidden in the ground in which the seeds are sown. To the roots of plants and fruit-trees the Chinese farmer applies liquid manure likewise."

The statements are confirmed by others which have been kindly communicated to me by a gentleman whose opportunities for observation during a residence in China of several years, were ample, and whose liberality and devotion to agriculture and horticulture have already conferred upon the community results of great interest and value.

of animals With us, thick books are written, but no experiments instituted; the quantity of manure consumed by this and that plant, is expressed in hundredth parts, and yet we know not what manure is!

If we admit that the liquid and solid excrements of man amount on an average to 1½ lbs. daily, (5·4 lb. urine and ¼ lb. fæces,) and that both taken together contain 3 per cent. of nitrogen, then in one year they will amount to 547 lbs., which contain 16.41 lbs. of nitrogen, a quantity sufficient to yield the nitrogen of 800 lbs. of wheat, rye, oats, or of 900 lbs. of barley. *(Boussingault.)*

This is much more than it is necessary to add to an acre of land, in order to obtain, with the assistence of the nitrogen absorbed from the atmosphere, the richest possible crop every year. Every town and farm might thus supply itself with the manure, which besides containing the most nitrogen, contains also the most phosphates; and if an alteration of the crops were adopted, they would be most abundant. By using, at the same time, bones and the lixiviated ashes of wood, the excrement of animals might be completely dispensed with.

When human excrements are treated in a proper manner, so as to remove the moisture which they contain without permitting the escape of ammonia, they may be put into such a form as will allow them to be transported, even to great distances.

This is already attempted in many towns, and the preparation of human excrement for transportation constitutes not an unimportant branch of industry. But the manner in which this is done is the most injudicious which could be conceived. In Paris, for example, the excrement are preserved in the houses in open casks, from which they are collected and placed in deep pits at Montfaucon, but are not sold until they have attained a certain degree of dryness by evaporation in the air. But whilst lying in the receptacles appropriated for them in the houses, the greatest part of their urea is converted into carbonate of ammonia; lactate and phosphate of ammonia are also formed, and the vegetable matters contained in them putrefy; all their sulphates are decomposed, whilst their sulphur forms sulphuretted hydrogen and hydro-sulphate of ammonia. The mass when dried by exposure to the air has lost more than half of the nitrogen which the excrements originally contained; for the ammonia escapes into the atmosphere along with the water which evaporates; and the residue now consists principally of phosphate of lime, with phosphate and lactate of ammonia, and small quantities of urate of magnesia and fatty matter. Nevertheless it is still a very powerful manure, but its value as such would be twice or four times as great, if the excrements before being dried were neutralized with a cheap mineral acid.

In other manufactories of manure, the excrements while still soft are mixed with the ashes of wood, or with earth,* both of

* This is practiced in the vicinity of large cities in the United States.

which substances contain a large quantity of caustic lime, by means of which a complete expulsion of all their ammonia is effected, and they are completely deprived of smell. But such a residue applied as manure can act only by the phosphates which it still contains, for all the ammonical salts have been decomposed, and their ammonia expelled.

The sterile soils of the South American coast are manured with a substance called guano, consisting of urate of ammonia, and other ammoniacal salts, by the use of which a luxuriant vegetation and the richest crops are obtained.* The corn-fields in China receive no other manure than human excrements. But we cover our fields every year with the seeds of weeds, which from their nature and form pass undigested along with the excrements through animals, without being deprived of their power of germination, and yet it is considered surprising that were they have once flourished, they can not again be expelled by all our endeavours: we think it very astonishing, while we really sow them ourselves every year. A famous botanist, attached to the Dutch embassy to China, could scarcely find a single plant on the corn-fields of the Chinese, except the corn itself.†

The urine of horses contains less nitrogen and phosphates than that of man. According to *Fourcroy* and *Vauquelin* it contains only five per cent. of solid matter, and in that quantity only 0.7 of urea; whilst 100 parts of the urine of a man contain more than four times as much.

The urine of a cow is particularly rich in salts of potash; but according to *Rouelle* and *Brande*, it is almost destitute of salts of soda. The urine of swine contains a large quantity of the phosphate of magnesia and ammonia; and hence it is that concretions of this salt are so frequently found in the urinary bladders of these animals.

It is evident that if we place the solid or liquid excrements of man, or the liquid excrements of animals, on our land, in equal proportion to the quantity of nitrogen removed from it in the form of plants, the sum of this element in the soil must increase every year; for the quantity which we thus supply, another portion is added from the atmosphere. The nitrogen which we export as corn and cattle, and which is thus absorbed by large towns, serves

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* The recent analysis of guano, given by M. Voelckel (page 80.) confirms what Klaproth found viz., that among its characteristic constituents it contains, besides unchanged uric acid, a considerable quantity of two of its usual products of decomposition, viz., oxalic acid and ammonia.

The action of guano has been ascribed by some to the products of the decomposition of the organic matter, like humus, rather than to its ammoniacal salts. The very small proportion of this matter which appears from the above analysis to be soluble, and the thin sprinkling of the guano which is given to a field, seem to render it probable, that the organic matter can have but little influence.

† Ingenhouss on the Nutrition of Plants, page 129 (German edition.)

only to benefit other farms, if we do not replace it. A farm which possesses no pastures, and not fields sufficient for the cultivation of fodder, requires manure containing nitrogen to be imported from elsewhere, if it is desired to produce a full crop. In large farms, the annual expenditure of nitrogen is completely replaced by means of the pastures.

The only absolute loss of nitrogen, therefore, is limited to the quantity which man carries with him to his grave; but this at the utmost cannot amount to more than 3 lbs. for every individual, and is being collected during his whole life. Nor is this quantity lost to plants, for it escapes into the atmosphere as ammonia during the putrefaction and decay of the body.

A high degree of culture requires an increased supply of manure. With the abundance of the manure the produce in corn and cattle will augment, but must diminish with its deficiency.

From the preceding remarks it must be evident, that the greatest value should be attached to the liquid excrements of man and animals when a manure is desired which shall supply nitrogen to the soil. The greatest part of a superabundant crop, or, in other words, the increase of growth which is in our power, can be obtained exclusively by their means.

When it is considered that with every pound of ammonia which evaporates, a loss of 60 lbs. of corn is sustained, and that with every pound of urine a pound of wheat might be produced, the indifference with which these liquid excrements are regarded is quite incomprehensible. In most places, only the solid excrements impregnated with the liquid are used, and the dunghills containing them are protected neither from evaporation nor from rain. The solid excrements contain the insoluble, the liquid all the soluble phosphates, and the latter contain likewise all the potash which existed as organic salts in the plants consumed by the animals.

Fresh bones, wool, hair, hoofs, and horn, are manures containing nitrogen as well as phosphates, and are consequently fit to aid the process of vegetable life.

One hundred parts of dry bones contain from 32 to 33 per cent. of dry gelatine, now, supposing this to contain the same quantity of nitrogen as animal glue, viz. 5.28 per cent., then 100 parts of bones must be considered as equivalent to 250 parts of human urine.

Bones may be preserved unchanged for thousands of years, in dry or even in moist soils, provided the access of rain is prevented, as is exemplified by the bones of antediluvian animals found in loam or gypsum, the interior parts being protected by the exterior from the action of water. But they become warm when reduced to a fine powder, and moistened bones generate heat and enter into putrefaction; the gelatine which they contain is decomposed, and its nitrogen converted into carbonate of ammonia and other ammoniacal salts, which are retained in a great measure by the powder itself. (Bones burnt till quite white, and recently heated

to redness, absorb 7.5 times their volume of pure ammonical gas.) Charcoal in a state of powder must be considered as a very powerful means of promoting the growth of plants on heavy soils, and particularly on such as consist of argillaceous earth.

Ingenhouss proposed dilute sulphuric acid as a means of increasing the fertility of a soil. Now, when this acid is sprinkled on calcareous soils, gypsum (sulphate of lime) is immediately formed, which of course prevents the necessity of manuring the soils with this material. 100 parts of concentrated sulphuric acid diluted with from 800 to 1000 parts of water, are equivalent to 176 parts of gypsum.

SALT AS A MANURE.

Salt in a moderate quantity, on most soils and situations, is useful to vegetation and generally. Some plants are most benefited by salt than others, and will flourish the better by the application of so large a quantity as would prove injurious to some kinds.

The business of using salt as a manure, showing on what soils and in what situations, and for what productions it is particularly beneficial, and what plants are most susceptible of injury from its use, has not yet been reduced to a regular science.

Much yet remains to be learned on this subject, and it can only be gained by exact experiments and a long course of correct observations, in order to show its general effects, whether transient or permanent. Yet many facts are before the public that seem as a guide or caution.

We now introduce this subject for the purpose of directing attention to the use of salt as a manure for turnips and cabbages. Some gardeners who have used salt in the cultivation of these plants in old gardens, say that they flourish much better for the salt, besides the advantage of destroying insects. We have not heard of the quantity generally used, as it is applied according to judgment and practice that has proved successful.

One farmer has informed us that he has used about six bushels to the acre, with good success; some use as much as eight or ten bushels to the acre.

It is the better way to apply salt a week or two, or longer before sowing, or setting plants, that it may be well mixed and spread in the soil; for when salt, unmixed with other substances, that will scatter it and weaken its effects comes in contact with most plants, it is as sure death to them as fire.

Asparagus is a marine plant and will bear a great quantity of salt, which serves as one of the best manures. We applied salt to asparagus last year, in sufficient quantity to kill the weeds, and as the weeds were very numerous, and we used cheap salt, we saved in labor four times the cost of the salt.

The asparagus was in double rows, one foot apart, with a space of two feet between, and eight rods long. We dissolved salt in eight times its measure of water, which was as strong as it could be made, as the water was fully saturated. To each double row we applied in solution, as we have named, six quarts of salt. In a few days, the destruction of the weeds was complete, excepting a very few of hardy varieties, that seemed to be as much benefited by the salt as the asparagus.

And there was a space between the double rows, to which no salt water was applied, it was put on about half the ground, which was at the rate of six quarts to a piece of land eight rods long and one and a half foot wide, which is six qnarts to 8-11 of a rod—one peck to a rod, nearly—or 40 bushels to the acre. No weeds of consequence have started this spring. Where some of the asparagus has been taken up we intend to plant various kinds of vegetables, with the same by the side, where no salt has been used, for comparison, and where the land otherwise has been treated in the same manner, to see what effect the salt will have this season.

We applied to turnips, in the drill, on a very dry, gravelly soil, a compound of two parts each, of plaster, coal ashes, old lime, and one part of fine salt. Half a peck of this mixture was applied to a drill 8 rods long, which was equal to a square rod, as the drills were two rods apart; being twenty bushels to the acre.

Though the soil was rather poor and no other manure used, the turnips were large, and the yield very good. It was evident that they were much better where this mixture was applied than in drills that were omitted for experiment; and where we put a double quantity on one drill, the larger yield in consequence was very plain. But to which ingredient in this mixture the increase was to be attributed, we know not, but probably to the ashes, from other experiments which we made, though in a different soil.

[*Yankee Farmer.*

For the Southern Agriculturist.

REPORT OF THE COMMITTEE ON PACKING SEA-ISLAND COTTONS.

READ BEFORE THE ST. LUKE'S AGRICULTURAL SOCIETY.

Mr. President,—At the last November meeting of this Society, the undersigned were appointed a Committee to report on the following resolution:

"*Resolved*, that a Committee of Three be appointed, to report upon the present mode of packing Sea-Island Cotton, and whether a more expeditious and economical method may not be introduced, involving the least injury to the staple and appearance of the Cotton."

Your Committee will first examine into the origin of the practice of packing with the pestle, and then proceed to state the advantages and disadvantages of packing Long Cottons with the Pestle and Screw-Press, as they have occurred to them.

Is the present mode of packing our Cotton peculiarly fitted to the staple, or did its introduction among us, originate with the growers of Sea-Island Cotton? We answer, No!

From the earliest production of Cotton in our State, the pestle was the instrument first used in filling the bag, and is still used by some of the up-country planters, both in South-Carolina and Georgia. But when the Black-seed Cotton supplied the place of Indigo, and our planters became engaged in a new culture, they *borrowed* from the Short-staple planters *their method* of packing the bag. The latter have improved upon the old plan, by the substitution of the Screw-press, while we have remained stationary.

Again. Have experiments ever been made to test the superiority of our practice, over all others in use in the Cotton-growing region? With a single exception, we believe not. And under this exception we will mention, that a large and intelligent planter of Sea-Island Cotton in Georgia, a few years ago engaged in the experiment of packing upwards of a hundred bags of his crop by the Screw-press, which he had errected for the purpose, on the most approved plan. On sending his Cotton in the *square bag* to market, the buyers refused to take it. To remove any doubts from their minds as to the quality of the article, he went before a magistrate, and rendered his affidavit to the effect, that his Cotton then in market, was from the same seed that he had been planting for years, and which besides was well known to the buyers. But this was still unsatisfactory. And finally, in order to get his crop off his hand, he was obliged to repack it in the round bag, and sell it in parcels at a depreciation, with his Cotton of a succeeding year.—The buyers took no other exception to this Cotton, than the novel and unusual manner in which it was packed.

Your Committee have often inquired among our oldest and most intelligent planters, why a preference had been given to the pestle for so long a period, and what particular merits it possessed over all other plans? We have *invariably* been answered, that the buyers had been so long accustomed to see Long Cottons packed in

the round bag, that an *individual* who sent his crop to market in any other shape, would certainly lose by the transaction. And while they have thus expressed themselves, they have at the same time concurred in our belief; that the pestle injured the staple of the Cotton, and that a change in the manner of packing, would be advantageous to all concerned.

From this strong prejudice in favor of the round bag, we must all perceive, by the example just referred to, that any change from the existing method of packing, cannot be achieved by individual enterprise, but must be brought about by the *united action* of the different Agricultural Societies engaged in the growth of Sea-Island Cotton.

Our objections to the use of the Pestle are, that it involves *a loss of time*, and causes a decided injury to the fibre of the Cotton.

In proof of the loss of time, as compared with the Press, your Committee will state, that two men, assisted by a boy to drive a pair of mules, will pack by aid of the Screw-Press, fourteen bags of Cotton in one day—or one man, a boy and horse, will pack one bag in two hours.

By the present process among us, it will occupy one man fourteen days to execute the above work; or otherwise expressed, fourteen men, one day.

The Press complete, with the exception of the Screw, could be constructed and put together by our own plantation carpenters, at a cost not exceeding $65. This estimate provides, that the stuff is procured from the planter's own pine-barren.

Regarding the second objection, as to the injury to the fibre, &c., we assume, without the fear of contradiction, that the less our staple is turned and tossed about, the freer it will be from knitters and tangles, and as a consequence, more even and regular in its fibre. We contend then, that the sharp edge of the pestle, combined with the trampling of the hard, heated feet of the packer, will have the effect of matting, soiling and breaking the delicate fibre of the long cotton, to the prejudice of its intrinsic market value. On the other hand, while we can detect none of these objections in the Press, it comes recommended to our notice, by its superior expedition, economy, and equable downward pressure. By the substitution of the Press, we furthermore cause a deduction in freight, shipowners prefering to carry the square bag, on account of the

increased facility given to stowage. We might also be enabled to purchase a cheaper quality of bagging, instead of the heavy, expensive article, which our particular mode of packing, compels us to use. Should this turn out to be the case, we help to increase the consumption of *a new kind of bagging*, the growth of our own soil, and manufactured in our own State. We would thus be giving encouragement to our own labor, prevent large sums of money from going annually out of our own limits, and disappoint the greedy expectations of an iniquitous party, who for selfish purposes, would compel us to buy an inferior article of bagging from the Kentuckian, or a good commodity, at an exhorbitant rate from the foreigner.

Many other reasons for adopting the Press, and rejecting the Pestle, have occurred to us; but as they must be apparent to all practical planters, we have refrained from expressing them.

To show how important to our interests it is, to send our Cotton to market in the best possible condition, we will call your attention for a few moments, to some extracts of a letter, addressed by an English spinner, to a firm in Charleston, and by them distributed in the shape of a circular, to a few of the principal planters of extra fine Cottons. It is true, that the remarks we shall present, are applicable rather to the extra fine numbers than to coarser brands, but they nevertheless afford useful hints to all the growers of Long Cottons.

The spinner says in the first part of his communication, "I shall 'feel obliged to you, if you can succeed in impressing upon the 'planters, the vital importance of sending us the select seed Cotton 'in a state less injured than it is, by the present mode of preparing 'it for market." Again he remarks, "Many manufacturers of ex-'tra fine goods have intimated to me, that they would willingly 'make the attempt to increase the quantity of these goods, provid-'ed they could be furnished with the yarn of the requisite quality."

"In all our communications with the manufacturers, both in this 'country and in France, they have invariably pointed out the nips, 'as the objection to the use of the extra fine numbers."

"The Cotton as prepared by the planter for market, is too *sod-'dined*, *stringy*, and *compressed* to be worked with satisfaction."

The spinner then concludes with suggesting, "that the planters '*pack* their Cotton with care, avoiding tossing, or *working it in* '*ramming*, *compressing it little*, avoiding every thing that will *sod*-

'*den* it. And finally, whatever means the planter can take in the 'first instance, to lessen the necessity of subsequent cleaning and 'picking on the part of the spinner, and in his *after process*, to send 'us the cotton in an open fleecy state, will tend to remove the diffi-'culty incidental to the spinning of fine cotton yarn, and to extend 'the use of extra fine numbers."

As *one* then, among other means, of avoiding *some of the exceptions* taken to the preparation of our staple by the spinner, your Committee unanimously recommend the adoption of the Screw Press for packing Sea-Island Cotton, to the attentive consideration of this Society.

THOS. F. DRAYTON,
JOHN W. KIRK,
BENJ. F. SCOTT. } *Committee.*

St. Luke's Agricultural Society,
Sept. 14*th*, 1842.

Resolved, That the Report of the Committee on packing Cotton, which has been received by this Society, be published, and the Corresponding Secretary be requested to furnish a copy to the Southern Agriculturist for publication, or to one of the Gazettes.

AN EXTRACT FROM AN ADDRESS,

DELIVERED LATELY TO THE AGRICULURAL SOCIETY OF —— DISTRICT,

BY A MEMBER.

A proposition was offered by Dr. A., at the close of the last meeting of the Society, which in my opinion is entitled to consideration, and having reduced some of my reflections on the subject to writing, I beg leave to submit them to your consideration.

The proposition is substantially this:—to offer a premium for the most satisfactory report on the general management of a plantation, or on any one or more of the essential departments of Agriculture. It seems to me, that a more judicious application of our funds for the advancement of our object could not be made, than by offering and awarding a series of premiums for reports of the nature of the one suggested. I will first briefly advert to some of the advantages that might reasonably be expected from such a scheme of premiums, and then endeavor to obviate some of the objections to which it may be liable.

In the first place, it would induce candidates for premiums, to take into view, the whole or some considerable portion of the art, business or science, which it is the object of this Society to improve, and I submit whether that is not the proper course of proceeding. A planter to be successful, must direct his attention and exertions to a variety of objects, and not confine his energies to one, or even two or three subjects. Agriculture is a system composed of a variety of departments, all or many of which, are dependent on each other, and all or most of them, must be more or less attended to, on a well managed plantation. A man may rear very fine horses, mules, cattle or hogs, and yet be a very indifferent planter. Whether the operations of the planter be successful or ruinous, depends on the economy of his plantation taken as a whole, and is a question of profit or loss on the entire establishment.

The next advantage to which I would refer, is, that by the system of premiums proposed, the experience and observations of individuals, would be placed in the possession of the Society, and might be imparted to the public. A fund of useful information would be collected—the reports would be placed among our proceedings—copies might be taken, and the more interesting would, doubtless, be published in some of the periodicals of the day, and thus much valuable knowledge diffused through the community, which is the main object of this Society. The operations of Agriculture consist in innumerable details, most of which taken separately, appear to be of little importance, yet in the aggregate, they compose a system, upon the knowledge of which, successful planting depends. We occasionally notice a judicious plan or operation in the management of a skilful farmer, but the effect is almost always lost by not attending to, or not perceiving the general system of which the approved operation is only a part. I know several individuals in this District, who, from long and close attention to agricultural pursuits, have accumulated a fund of information, which, to a young planter, would be invaluable, of the importance of which, the individuals themselves, seem to be, and are, in fact, insensible. It is, then, our duty to take steps to elicit this knowledge for our own and the public good.

Again, by making a record of all his principal operations and observations, the individual himself would be benefited. I am not

a practical Agriculturist, but I venture to say, planters often commit mistakes a second time, in consequence of not having made a note of the first—that planters learn much by experience and observation, which they entirely forget; or cannot readily recall to memory, as occasion may require. These reports would be composed entirely or mostly of dates, expenses, modes of operation, profit and loss, and particular and general results, which would be a source of satisfaction to the individual himself, as well as to his children when he is gone; to say nothing of other, and perhaps greater advantages, it would have a tendency to inculcate habits of closer and more systematic attention to his business, which I consider of the last importance.

And lastly, though not the least advantage, which would result from this mode of awarding premiums, I think a better feeling would be infused into the Society—a spirit more liberal, more disinterested, and more consistent with the character of Carolina planters.

It may be objected that farmers and planters are not in the habit of recording their operations, of keeping accounts or noting results, —that many who have valuable materials for a report, are not able to write one—that premiums would be awarded to the best productions in a literary point of view, without regard to the practical value of their contents—that a crude or plausible theory would often be rewarded in preference to plain unvarnished statements of fact. It is true that planters are not in the habit of keeping accounts, or recording their operations, which in my opinion, is one of the greatest disadvantages under which they labor—hence it is, that they go on from year to year, ignorant of the true condition of their affairs, until roused from their lethargy by the pressure of debt, or, as it happens not unfrequently, die in the belief, that they leave their families in comfortable circumstances, when after the payment of their debts, their children are not worth a dollar, and if otherwise, leave nothing to direct their families in the management of their property, but an example, which in nine cases out of ten, had better be avoided than imitated. There is scarcely a farmer in the District, who cannot write well enough, to preserve the substance of such reports as would be expected or required, and if he has the materials, he can easily have them arranged into form by a neighbor, for it is to be recollected that these reports will be

valuable or not, on account of their substance, and not for the style or manner in which they are written. If we encourage fanciful, theoretical disquisitions, instead of plain statements of fact leading to practical conclusions, it will be our own fault.

It appears to me, that our improvement in regard to our stock of domestic animals, has been and will continue to be, as great if not greater, (except as to sheep) than the other equally important branches of Agriculture, and it should be remembered, that improvement in some branches, particularly in pasturage, should precede our efforts to improve on live-stock. It is in vain to think of increasing or improving our stock of sheep, while we set as high a value on our dogs as we do. I think I can say with truth, that the Agriculture of no country can be considered as prosperous, where more dogs are to be found than sheep. It is to be regreted, that we cannot with any prospect of success, attempt to improve the breed, or increase the number of these valuable animals—there is no portion of our country better adapted to the rearing of sheep, than the pine region of this State—they do better and are subject to fewer distempers in our pine woods, than in the most luxuriant artificial pastures—mutton might, with us, be the cheapest animal food. I do not think much improvement can be made as to cattle, until we pay more attention to pasturage—the improved breeds cannot thrive or even exist among us, until we make better provision for their sustenance, and as to hogs, I think it will be found, that raising even Berkshires on corn made at the rate of from five to ten bushels to the acre, is a poor business—if we are to depend on the woods with the run of our fields in the fall and winter we had better stick to the old breed with perhaps a slight cross of the improved.

Should the proposition in question, be deemed worthy of further consideration, I would suggest that such a number of premiums should be offered, as the funds of the Society may warrant—the highest for the most satisfactory report, the next highest for the next, &c., without any condition or restriction, except that each report should be sumbitted to the judgment of a committee, or such other person or persons, as may be appointed to award premiums—that all members should be invited to make reports on any and all subjects connected with agriculture, embracing the entire management of a plantation, or any branch of domestic economy.

CULTURE OF COTTON.

The bedding up of the ground for Cotton can scarcely be commenced too early. As soon therefore as the first planting of corn is made, the ploughs should be set in the cotton fields. Do not be afraid that the rains which may fall on your grounds after the bedding up, will beat it too hard to plant—for cotton, unlike our other growths, loves a firm soil to take root in.

Lay off the rows on your thin lands, 3½ or 4 feet apart. Many of our planters put their cotton entirely too close. When too close it runs up spindling, and the forms will not mature into full bolls. By giving distance it will spread better, will not be so apt to shed its forms, the bolls will be larger, free of rot, and being more exposed to the sun, will open better and earlier.

On your bottom and rich lands, give from 6 to 8 feet distance between the rows. Cotton on such lands demands full exposure to the sun, or it will be too late and caught by frost. The best planters on the river give their cotton, on fresh lands, from 10 to 12 feet distance, and on their oldest fields never less than 8.

If your land is not much trodden by stock and is naturally loose, you may lay off your rows with a turning plough, and leave a slip of unploughed land just under the middle of your ridge, when you run your second plough to commence the bed. If you lay off in this manner however, you must be careful and have your laying off poles marked with one mark, just six inches wider than you want your rows, and another just six inches narrower. Then lay off the rows in which the plough throws the dirt inwards towards each other, with the long measure, and the rows where the barsides of the furrows will be towards each other, with the short measure. By this plan you will have the distances between centre to centre of your beds equal through your field. But if you lay off in this way with a turning plough, without using the two measures, you will have your rows alternately with a foot difference in their width.

The plan of leaving a slip of unploughed land under the middle of the beds, is one practiced by most of our best planters on soil not too hard. It is founded on the fact, that unless cotton gets a firm close soil to take early root in, the tap-root is apt to rot off and the plant perish. Planters never consider their stand safe, until the roots have struck the firm ground. In fields sown on high beds of loose earth, whole acres may sometimes be seen rotted down, should a drought follow after the seed have sprouted.

On hard clay soils, your rows should be laid off with a shovel plough, and the bed thrown over the furrow it opens.—Indeed, on all soils which you expect to let lie some time after the ploughing, before you plant, the shovel is the best for laying off, as the necessity of the alternate measuring, which a negro is apt to neglect, is then dispensed with.

To sow, open your beds with a scooter or bull-tongue, and, sowing your seed so as to make a plainly visible line in every part of the furrow, run a harrow over them to cover and scatter the clods. If a *roller* is used after the harrow, or without it, you seed will sprout much better, and you may get a stand with half the quantity usually used.

The after culture and management we will give as the season advances. [*So. Western Farmer.*

PLOUGHING CORN.

One of the points most mooted among farmers at the present day, is whether Corn should be ploughed deep between the rows after it attains 2 or 3 feet in height, or after that period it should simply be kept clear by a harrow or cultivator and the roots left as much undisturbed as possible. Scarcely an agricultural paper comes to hand, but we see arguments on each side of the question, from different individuals who claim to have followed each plan with success. Although the repeated close cutting of the roots, which is done by the ploughing system, seems rather a contradictory way of giving a plant vigor, yet that has been the system generally practised in this country, and to which the most of our farmers are inclined. On the other hand, we have not yet seen any account of the crops made in Kentucky on the other plan being beaten.

Where there is so much difference of opinion among the farmers of the best corn growing regions of the Union, we must be excused from giving any decided opinion on the subject, until we prove the result of some experiments we shall this year make on each plan; and this course we earnestly request our corn raising friends to also adopt—sending to us for publication the results of their different experiments.

In the mean time, we will here give as briefly and impartially as we can, the arguments used by the advocates of the opposite systems.

The friends of surface tillage insist, that after the ground is properly ploughed and turned over, (as they do it) to the depth of 6 or 8 inches before the corn is planted, it will not afterwards bake in dry weather; and to prevent the baking, they say, is the only thing which will justify the use of the plough after the roots begin to spread—the roots being the mouths of the plant, that it is opposed to every principle of vegetable philosophy to cut them, and thus deprive the plant of the food it would take in by these mouths until new ones are provided—supposing the plant has sufficient vigor to send out new ones at all. But their strongest argument is set forth in the authenticated measurements of crops raised in Kentucky on their system—being from 150 to 180 bushels to the acre!

The friends of the opposite method of cultivation, on the other hand, allege that the ground *will* bake, and the corn in consequence

fire in dry weather, unless the plough is freely used—that the cutting of the roots, necessarily done, so far from injuring, is of benefit to the corn, in as much as a root cut, in a very short time, sends out multitudes of branches, which having loose fresh earth to run in, soon more than compensate for the temporary loss of the original mouth. This cutting of roots they say is justified by analogy—for we prune a fruit tree to make it more vigorous, and physic (and in consequence starve for a while) a horse when we commence to fatten him. And (making a home-thrust at their adversaries,) they say that in as much as the most of the roots of corn run immediately below the surface, the cutting of those roots, to which so much objection is made, is not at all avoided by the use of the harrow and cultivator by the advocates of surface tillage. In reply to the successful cropping in Kentucky, they say that much of the result is to be attributed to favorable seasons—and the fine sandy alluvial of the river bottoms where those crops were grown —referring on their side, to crops of from 70 to 100 bushels to the acre, which, considering the soil, seasons, &c., they insist is as good as the Kentucky crops.

On such a subject,

"Who shall decide when *farmers* disagree?"

We at least as yet shall not attempt it; but will simply observe, as in other cases, both sides may be to a great extent right, and the truth lie, as common, between them. On light sandy soils, such as those of Kentucky, where the above large crops were raised, the plough no doubt may be dispensed with, after the corn is waist high, and the cultivator and harrow used afterwards. But on stiff clays which are so much inclined to bake, we hardly think the cultivator and harrow could manage the hard crust they form, when a drouth succeeds such beating rains as we have here in our springs.

Let our farmers think for themselves, and confer with each other, on such subjects through our columns.

[*So. Western Farmer.*

ITALIAN RYE GRASS.

I enclose you a few seeds of the Italian Rye Grass, (*Lolium Italicum,*) having seen no notice of any experiments that you have made with it. I had about a score of the seeds of this celebrated plant, enclosed to me in a letter from Washington, late in the spring of 1840, which I sowed in an upper border in my garden, in drills 6 inches apart, and 4 inches in the drills. Every seed germinated I believe, and by winter of the same year, the grass had quite covered the spaces between the drills, the whole presenting the appearance of an old sward. It withstood that winter remarkably well, and early last summer ripened its seeds, (the exact time not remembered) a handful of which I gathered from the first ma-

tured heads, (the enclosed being a part) when shortly afterwards the balance and greater portion were scattered on the ground by a hard rain that fell while absent from home. The seed so scattered, are now growing luxuriantly, and occupy quadruple the space of ground first sowed. During the whole of our recent very open winter, the grass has continued growing, looking fresh and green, except for a few days about two months since, when it was eaten off close to the ground by three or four horses that accidentally got into my garden, and every root I believe was trampled on by them. But notwithstanding this severe usage, occurring too just before the coldest weather we had during the winter, this plant is now much more forward than any species of grass I see growing—a day or two since I was employed in transplanting more closely together the turfs of this grass that had been formed from the seed scattered by the rain last summer, and really I was surprised to witness the size of some of the sods that had evidently grown from a single seed, many of them being as large as my hand; some of the seed fell on the main path of my garden, which is almost every hour in the day walked on; but the rye grass still flourished and grew when almost every other description of plant was kept down. The late Judge Buel spoke in terms of the highest commendation respecting this grass, and seemed to think that if it should be found to adapt itself to the climate of the United States, it would prove one of our most valuable grasses. Whatever doubts may have existed in the mind of this great man as to its adaptation to the climate of New-York, from the experiments I have made, I think I may venture to assert the entire suitableness of the climate of Tennessee to its growth, and that it will bear grazing and trampling on to the extent of any of our grasses. It appears from the writings of European Agriculturists, that this grass is as quick in its after growth as the Lucerne is, and it certainly has this advantage over that plant, namely; that while the latter requires the very best of soils, and the most careful tillage to ensure its profit, the rye grass will flourish on almost any soil, and with but the culture essential to the growth of the other grasses. Hence this, as a grass for *soiling* merely, would seem to be preferable to the other; and for pasturage, unquestionably far superior.

But I have already tresspassed too long on your attention, and will conclude by subjoining an extract or two from a communication relating to the Italian Rye Grass, (translated from the German) and inserted in the N. Y. Cultivator, Vol. 2, p. 6.

"The Italian Lolch (Lolium perenne italicum aristatum) yields the most abundant fodder of any kind of grass that is known. If sown in October, its growth being very rapid, before winter sets in, makes a thick sward equal to that on old grass land, and the first crop of hay is double to that of a common meadow. It commonly grows to the height of 4 feet, on a soil more moist than dry, and gives always *four abundant crops* in one season, and frequently more.

"The haulm is covered with leaves of a light green color. The most proper time to sow it is in the fall; after a crop of grain is taken off from the land, turn the stubble over, harrow it and sow the seed. And frequently it proves large enough to cut before cold weather. Such a meadow, shows itself before winter thick and well overgrown, like an old one, and the first year's crop is, by haying time, a full one; sowing in the spring or month of April, requires moist weather and more seed. The plant is lasting. And at the end of the seventh or eighth year, these medows are as vigorous as they were in the first year. A soil more moist than dry is generally best adapted for this piant, but it has been tried on high lands and on the Alps, where it likewise perfectly throve."

"The seed is sown broad cast—about 40 pounds to the acre. If sown in the spring, 8 to 10 lbs. more are necessary, and one chooses as much as possible, a wet time to sow it."

Very respectfully yours, T. C. RYALL.

Bedford County, Tenn.. April 1842. [*Agriculturist.*

AGRICULTURAL ECONOMY.

TO THE STATE AGRICULTURAL SOCIETY OF SO. CA.,

The following on the part of the Newberry Agricultural Society, is respectfully submitted:

The question, in what consists true Agricultural economy, is easily asked: and perhaps admits of more theoretical answers than any other in practice. No maxim works better than that of Dr. Franklin, "a penny saved is a penny earned." It is by not heeding this short truth, that Southern planters are involved in so many difficulties.

To begin with a plantation: how little heed is paid to the preservation of the land, to the application of manure, to the health, and to the subsistence of the laborers? In each of these respects, how much would be saved by early attention! A plantation of prime land, in twenty years, is rendered valueless, if every year the arable land is cultivated in corn and cotton without manure; but if, instead of this course, the crops are changed, and cotton, corn, wheat or oats, are made to succeed one another with a judicious application of manures, the cultivation of land being well, will, instead of injuring, improve it. It is, beyond all question, bad policy to clear and cultivate the steep declivities leading to branches, creeks and other streams of water. The consequence of such clearing is in general, to precipitate the whole soils of the hills in a few years into the streams below, and to choke up their natural vent. This improvidence renders such land hopelessly barren, and with its barrenness poisons the fountains of health. Whole

sections of country are thus rendered as sterile as can be well conceived, and are thus covered with that perpetual exhalation from marshy alluvial deposits, which uniformly produce in our Southern country, fever and fever and ague. The plain practical common sense view of this matter, is to remedy this evil in these ways: 1st, by ceasing this mode of clearing and cultivation, (where it can be done;) 2d, to restore streams thus filled up, to their original level by ditching, and to suffer the hill-sides to grow up in the pine. 3d. Where it is necessary to clear and cultivate such hill sides, horizontal ditching and ploughing ought to be resorted to. Following up such a system of preservation, the land will be annually productive of more than interest on the investment in its purchase; and the continued drain of expense for medicine and medical attendance will be cut off.

The subsistence of the laborers on a plantation is another matter, about which there are many speculative opinions. In general, however, experience shows, that to have efficient laborers, they must be well fed and clothed. When that is the case, few men have any necessity to complain at the returns of labor. How can pork be best provided for the support of slaves, is a question of serious and grave consideration to our upper country planters. To such, we would say, let it be the product of your plantation. But mere advice is not perhaps what is expected. The why and wherefore may be demanded by some one, who thinks he can make money by raising cotton to the exclusion in a great degree, of corn? To such, the argument of *a practical farmer* is submitted. It may be assumed that 10,000 lbs. of pork is necessary for the support of 40 slaves: this at a cost of 6 cents per lb., (last year's price,) will amount to $600. How much will be the result of the labor of the same slaves, supposing half of them to be workers? One hundred bales of cotton, of 383 lbs. each, and corn and grain sufficient for all other purposes, except raising of hogs, will be admitted to be an excellent crop. Thirty bales of such a crop, at the average price of the last season in Columbia, 8 cents per lb., would give a gross result of $799 20.

From which is to be deducted bagging, 135 yards at 25 cents	$25 75
Roping, 82½ lbs., at 14,	11 75
Freight to Columbia, 9,900 lbs., at 50,	49 75
Allow half the cost of picking it out (as it is twice as much labor to do so, as to gather a crop,) at 25 cents per hundred, 31,500 lbs. seed cotton, (allowing 1050 lbs. to the bale,)	78 75
Toll for ginning, ½,	66 60
	240 45
Nett result.	$559 75
Which is less than the cost of the pork,	$600 00
By	40 25

This little estimate shows, that nearly ⅓ of a bountiful cotton crop must be expended for pork. Can it be raised for less? And how much less? are questions worthy of consideration. Generally it will be conceded, that the same labor and land which will make a bale of cotton, will make 30 bushels of corn. So instead of one hundred bales of cotton, let the planter owning the 40 slaves, of which we have spoken, make 70, and increase his corn crop, in the same proportion that his cotton is diminished, and he will have 900 bushels of corn for his hogs. The estimate of a practical farmer, Dr. Herndon, at the Agricultural meeting at Newberry, was, that with the aid of the grain fields after the crop was gathered, 5 bushels of corn would raise and support a hog weighing when killed, 200 lbs. According to this estimate, 250 bushels of corn would make the 10,000 lbs of pork needed: but double that estimate, and give to every hog 10 bushels of corn, and then the pork would only cost 500 bushels of corn, and leave 400 bushels in the crib for sale, which at the most moderate estimate would produce $200 of income. This saving is enough to recommend the home production to every prudent man: but the convenience and comfort of having it at hand, and ready for all wants, can hardly be estimated.

These calculations and this reasoning, are based, it is true, on the low price of cotton; but true economy demands, that the course found to be prudent in a depressed state of the cotton market, should be adhered to when it is elevated. For our experience teaches us, that higher or even good prices for cotton, cannot be expected more than three years out of seven. If the raising of hogs is abandoned in those years, it will require two years of adversity to enable any planter to raise a supply. So that for two years he will be tributary to the West, and must pay at least one third of his annual crop of cotton. This, in itself, without looking to the increased price of pork, with the increased price of cotton, and to our increased means, is enough to show the propriety of adhering to the raising of hogs for home consumption, when even cotton may be 30 cents per lb., if even it should again reach that mad point of speculative folly.

The thriftiness of raising our own domestic supply, is easily demonstrated, by appealing to living instances. In the District of Newberry, the most prosperous men are those, who have made at home enough for all their wants. This is not only the case now, but it has been so at every period in the last forty years. One of the richest men in Richland, years before his death, referred to the period of war, as that in which he made the most money. Cotton did not then exceed 6 cents. Yet he made his own supplies and he was in doing so, enabled to furnish provisions from his excess, to Columbia and to Charleston, which made a greater income to him, than the large high priced cotton crops of succeeding years.

This policy of saving, not only benefits the planter, but it is equally important to the merchant. To him at least, annual pay-

ments by his customers are very important. They enable him to pay his own debts, and to invest his profits, making his interest, annually, capital. At present this cannot be done. Why? The early sales of cotton have to be applied to the purchase of pork: and the late sales have to go for the other domestic supplies, or meet some other pressing demand.

There are many other parts of domestic economy, to which the attention of planters should be directed. Clothing for laborers can to a great extent, be made by women and children, who are unfit for the field. The cotton field furnishes the material for the fabric for the summer wear. For the winter, sheep ought to be reared. The expense in this respect is almost nominal, good pastures for summer, and a supply of shell oats for the winter, are all which will be necessary. How improvident are farmers to neglect that stock, which will clothe their people with wool, and furnish their table with flesh, fully equal to that venison which has been alike prised by savage and civilized man.

Next, and perhaps of more importance in many points of economy, is a fine stock of cattle. Milk, butter and cheese at home, and the product of one's own farm, are necessaries approaching to luxuries, which cannot be sufficiently appreciated. To these must be added, that they furnish your own butter and beef, and that in winter and summer they are, if properly managed, enriching your land, and literally thus more than repaying you for food and nurture. How easily a fine stock of our own native cattle can be obtained, will soon be perceived by any farmer, who will take the trouble to secure a good pasture for summer, and a good supply of food for the winter, with protection from the inclemencies of the weather.

If to these classes of stock which have been recommended to every planter to rear, we could add our own horses and mules, "*hard times*" would be only nominal. Farmers would be happy because they would be independent. Cannot this be done? It is only necessary to make the trial, and when made, it will be followed up year after year. The upper country is admirably adapted to raising horses and mules. Abundance of grain can be easily made far their support. Pastures (which are of more importance than grain) of native or foreign grasses can soon be prepared. The slight experiments made in this District abundantly prove this to be true.

These reflections, combining in some degree the experience and intelligence of more than one planter, are submitted to the State Agricultural Society of So. Ca., in the hope that public attention may be more directed to Agricultural economy than formerly.

[*Temperance Advocate.*

THE PLANTING OF POTATOES.

We are rather early in giving directions for the planting of this crop. But if we would notice the mode of planting most of the ordinary crops in season, we must take some one or more of them in anticipation of its proper time. We will premise that our success with this crop has been little favorable. Whether this be owing to the soil we have tilled; to the manure we have used; to the mode of applying the manure; or to injudicious methods of cultivation, or to all of these combined, we know not. Want of success with a crop which most farmers deem a good one, has caused us to study all the accounts of its cultivation which have fallen in our way; and also to study the plant and crop *in the field*, as far as we have had opportunity during the last year. Another thing we will premise, viz: the opinions we shall give, should be tried by many and varied experiments, before we shall venture to promulgate them as rules that farmers will obviously find it well to follow. If our statements shall induce them to make some experiments *on their own responsibility*, we shall be content.

Our practice has been to plant on a good loamy soil, with hard gravelly subsoil;—oftener on sward than on old ground. Have planted from the first to the twentieth of May. Have usually planted in hills 3½ feet apart;—put a good large manure-fork full of manure in the hill—say twelve to fifteen loads—or from four to five cords per acre. This manure has been applied immediately upon taking it from the barn cellar, while dripping wet with urine, and the potatoes—15 to 20 bushels per acre—have been put upon this dung forthwith and trodden *into it*. For after culture, the plough has been run between the rows, usually each way, and the plants hoed two or three times. This differs little from the common mode of operation in the eastern part of the Commonwealth, excepting that the manure is much more full of urine than that upon farms in general. Whether the *strength* of the manure has not been detrimental in our mode of using, may be a fair question, and if obliged to give an answer, we should *guess* that it has.

Potatoes generally do best in cool seasons and in cool soils. We have given them a hot bed. More than this, we have formed beds into which the atmosphere does not pass very freely. We can recal in memory several sayings and facts which render it probable that in this we erred. There was a common saying in our boyhood, which used to be uttered when we were planting on rough and cloddy land, that *sods* were the best covering for potatoes. Only a few years since, we noticed when digging potatoes, on a reclaimed medow, that those hills which were made up mainly of *small* clods, contained more and better potatoes than those hills which were formed from large clods, or those which were composed of the *fine* peat or peaty matter. This led us to think seriously upon a thought which had passed through the mind before,

viz: that potatoes require air. About two years ago, we mentioned this point to an observing farmer in Topsfield. He said, "your remarks remind me of what I witnessed last year, or the year before, on Dr. Nichols' farm. I was passing there one day about the first of June, and Mr. G. had some brakes, fern, *huckleberry* bushes, &c., in his cart, and appeared to be putting them into hills for planting. "What are you doing there, neighbor G.?" said I. "*Obeying orders*," said he. "Well, what are your orders?" "Why, the Dr. told me, after I had taken the manure out of the cellar, to put this stuff into the water in the bottom of the cellar, let it soak awhile, and then plant potatoes upon it." "*Small potatoes there*, thinks I," said our informant, Mr. Pettingill. "But," continued he, "I happened to pass by there in the autumn, when Mr. G. was harvesting the potatoes, and they were better than any others I saw that season."

Mr. Breck, the publisher of this paper, informs me, that several years since, he planted potatoes in his garden where the land was rich, and had long been tilled. In such places, vines or tops are usually luxuriant, while the bottom or tubes are small. He furrowed out this ground with a large plough, running deep, making drills four feet apart. He then nearly filled the drills with butt stalks; put his seed upon these, about a foot apart in the hill, then leveled on the furrow, and in tilling made no hill or ridge. From this land he obtained at the rate of between seven and eight hundred bushels per acre.

The process pursued by Mr. Barnum of Vermont, whose statement has recently been in our columns, though in many respects different from these here given, yet was well suited to keep the surface of the land so loose as to admit of a free circulation of air.

Now, without intending to say or intimate that air is *all* that this crop wants, we do intend to express the *opinion*, distinctly, that the crop does require more air than is usually allowed it. What may be inferred from the fact, that potatoes often do wonderfully well where they are planted upon swamp mud, muck, and from the other fact, that they grow well by placing the seed upon the surface of moist land, and covering them with straw? Both of these matters are loose, and would afford good ventillation.

To what does all this tend? What course is to be recommended? As our opinions on this point are so much matter of *theory*, we will not *recommend*. But we will mention methods that have occurred to us. One might put in the drill or the hill, a small quantity, four, five or six loads of well pulverized and good manure to the acre. This is wanted for the fibrous roots, the vine or stalk to feed upon. Above this might be put ten or twelve loads to the acre, of leaves, butt stalks, old potato vines, fine brush, chips or any thing of the kind, which would keep a place light and loose for the tubers, the potatoes proper, to swell and grow in.—When

planting, we know not whether it would be best to put the seed between the two kinds of dressing, or above them both.

Another method would be, and the work might be less, to manure with the good manure as before, using only a small quantity, planting directly upon that, covering *slightly*—stirring the earth well once or twice after the plants were up, and then putting the other dressing upon the surface. *N. England Farmer.*

CORN STALK SUGAR.

REPORT OF THE PARIS ACADEMY OF SCIENCES.

In the letter of the Paris correspondent of the *National Intelligencer*, of the 16th Sept., we find the following paragraph by which it will be seen, that the learned *Savans* of the Paris Academy of Sciences, have determined that the culture of Indian corn, for the manufacture of Sugar, possesses numerous advantages over the beet root. The settling of this point, by a body of men so eminent in scientific attainments, will go far to accelerate the fabrication of sugar from corn, and, as a necessary consequence, impart new interest and value to its culture. as the developement of this new channel of consumption cannot fail to exercise a happy influence upon *price*, and particularly so, as it is stated that an acre will yield 1,000 pounds of sugar of good quality, besides a correspondingly large quantity of molasses, as well as abundance of residium, of the very best character of feed for cattle. With such results and the highly favorable nature of our climate and soils for the production of corn, we infer that the day is not distant, when new encouragements will be imparted to animate the spirits, and nerve the arms of our enterprising corn growers.

"At the sitting of the Paris Academy of Sciences, on the 12th inst., a report was read from a committee on a very important memoir of M. Pallas, concerning the identity of the sugar extracted from stalks of Indian corn, *(la tige de mais)* with that of the cane. The report of the Savans confirm the memoir; dwells on the quantity and quality obtained from the stalk; and assigns to the culture of Indian corn, for the purpose, various advantages over the beet root. The process is not difficult. We have magnificent weather for the vintage."

As being connected with this interesting subject, we copy the following, and will barely remark, that the honor of starting this branch of business belongs to Mr. Webb, of that chivalric little State, *Delaware*, whose sons, whether submitted to the standard of patriotism or that of intellect, will lose nothing by comparison with those of the largest State in the Union. It was the proud province of her soldiers in the revolution, to struggle for victory until the last ray of hope had set, and when compelled to do so, to retreat with their faces towards the enemy, and since then, small as she is,

her statesmen, in the councils of the nation, have proved by every collision of intellect with the great men of our land, that if *Delaware* cannot measure acres with her overgrown sisters of the confederacy, she loses nothing by the comparison of *mind*.

A new way to make Sugar.—The experiment of making sugar from cornstalks, has been tried with success in both Pennsylvania and Ohio. We have heard of one gentleman who carefully cherished the full growth and developement of his stalks, for the sake of the sugar they would yield. When the small ears of corn made their appearance, he lopped them off, so as to leave all the strength of the plant to go into stalks; which thereby was made to grow to a greater height. Should this source of agricultural wealth yield all that is expected from it, it will be a great gain to the farmers of the West, who will rejoice to find that their superfluous cornstalks, can be turned to so good an account. It seems that in many parts of the West, they are making molasses, also, from cornstalks.

American Farmer.

HINTS ON THE MANAGEMENT OF SLAVES.

Never *threaten* a negro—but if you have occasion to chastise him do it at once. Such a remark as this, made in a passion: "You scoundrel, I will give you a hundred lashes for this in the morning"—will sometimes scare the best disposed negro to the woods.

Never show *passion* before them. If you are inflicting the severest punishment, do so in a mild cool temper. They at once conclude from such a course that you act from principle, not from impulse, and will expect you regularly to enforce your rules, not punishing at one time for what you pass over at another.

Always *keep your word* to your slaves. If you have told them punishment would follow a certain act and the act is committed, punish the offender at once and hear no excuses. It is better so, than to have them encouraged by your leniency to again violate your rules. If too you have promised a reward, and the reward is earned, pay it promptly. Nothing will sooner lose you the respect and affections of your negroes than a neglect of these rules.

Have no favorite that you will allow liberties that you do not to all, and forgive offences to whom, which you punish in others—but treat all indiscriminately according to their merits. Each will thus be encouraged to strive for your approbation.

Do not be betrayed, by a course of good behavior in your negroes, *to relax your discipline.* But if, by good management you have got your negroes tractable, obedient and trust-worthy, recollect that the way to keep them so, is to continue precisely the same treatment that has amended them. Any licences you may allow on account of good conduct, or any relaxation of your disci-

pline will not make your negroes happier—they will soon drop back to their old vices—you will find your rules neglected, insubordination and discontent the effects of your indulgence; and your slaves, when you try to resume your authority, ten times harder to manage than they were at first.

Negroes have very inferior minds and brains. They act from feeling and impulse more than from reason. They are generally entirely incapable of exercising a correct judgment, as to what would be for their interest and happiness. Tangible punishments and rewards, which act at once on their senses, are the only sort most of them can appreciate.

The negro is sadly deficient in conscientiousness.—*The way to keep him honest, is therefore not to trust him.*

So. Western Farmer.

RAISING OF CALVES FOR VEAL.

There is perhaps, no meat which comes to our markets in so indifferent a state as that of Veal. When proper care is taken with calves, there is no variety of flesh appropriated to the consumption of man, more palatable or gratifying to the human appetite, and yet notwithstanding this fact, from the indifference manifested by those who prepare them for the butcher, there is no meat, generally speaking, brought to the shambles so utterly destitute of all pretensions to fitness of condition. A calf, if properly fed, would command as veal, such price as would be ample remuneration for all trouble and expense for rearing and feeding; but as they are now brought to market, there is no part of the product of the farm which pays so indifferently well. And as there is a remedy at hand, this evil should be corrected.

With a view of contributing our mite towards the reform of this custom, of bringing *poor* calves to the slaughter, we will detail a method of making *fat* ones, which we have seen successfully pursued.

The calf when first calved, should be taken from the mother and confined in a dry dark room, with plenty of bedding. The mother should be let to it to suckle it three times a day at regular hours, and the calf should receive *all* her milk.

When the calf is a week old, in addition to its mother's milk, it should be given between the morning and midday and evening times of sucking, force balls made of raw egg and half a pint of corn meal at each mess; the balls to be made of convenient size to be given the calf without difficulty. The manner of feeding which we have seen pursued is this—the calf's head is held up and backwards by the feeder with one hand, who opens the calf's mouth with the other, and thrusts the force ball down towards the root of the tongue, when, by closing and holding the mouth, the calf is com-

pelled to swallow the ball. These two additional feeds will answer until the third week, when another egg and additional half pint of meal must be given, about an hour after the evening suckling. By feeding in this way, in four weeks the calf will be in good condition and ready for the butcher, and will command as much again as one which receives nothing but its mother's milk. These balls would be the better of being made up with milk which had been scalded.

Should this method of feeding *scour*, that may be very promptly corrected, by mixing with the balls a teaspoonful of powdered chalk, and one-fourth that quantity of powdered alum.

A calf which is large and strong, may be further improved by being fed with sweet skimmed milk. The calf may be taught to drink the milk by forcing its head down into the vessel containing it, and inserting the fore finger into its mouth for a day or two. And the color of the veal may be greatly improved by subjecting the calf to the operation of bleeding, twice during the fattening period, say at intervals of two weeks apart.

At all times the calf should have in a trough convenient to it, with two apartments, a small quantity of good hay, and grass of some kind, at either of which it may pick when it pleases.

Agriculturist.

HARDENING PORK.

To the Editor of the British American Cultivator:

Mr. Editor—I observed in your last number, an article selected from the Boston Cultivator, headed, "Apples for Stock," the object of which the writer had in view, was to prove that pork can be made with less expense and of as *good* quality, on apples as on potatoes, meal, or corn. He states, "That hogs are now fattened exclusively on apples, boiled or baked." It is not my wish to contradict the statements of this writer, but it appears that he thought it prudent, a few days before killing his hog, to order him some corn feed, thinking he might increase the quality of the pork. Whether boiled apples will make actually as good and as firm pork as meal or corn, I cannot say from experience, as we grow more acorns and hickory nuts than apples, in this part of our country; but it appears to me, that they would make rather soft feed to make good solid pork.

I will now give the result of my own observation and experience. I recollect when I was a boy, hearing the farmers talk about *hardening* their pork. It was quite common in the early settlements of the country for the hogs to get fat in the woods, upon nuts, &c., but previous to butchering them, it was a common practice to put them in the pen, and feed them on peas or corn for a short time, to *harden* the pork. Since I have been raising hogs, I have observed, that

the pork is better and firmer some seasons than others.—There was the last season an abundance of hickory, beach, and butter nuts; my hogs did not come home till Christmas; they were then fit for the knife; but wishing to make them still fatter, I put them in the pen, and fed them on good dry peas for five weeks, then butchered them.—When I cut up the pork, I observed about an inch and a half of good solid pork next the skin, particularly along the back, the remainder was soft and oly, and of an inferior description; and you might tell to a hair's breadth, where the pea fed pork commenced. I have observed before, the same thing, under similar circumstances: I am convinced from my own observation, that if we fatten our hogs on nuts, still-slops, or any kind of soft food, we need not expect to *harden* any more of it with peas or corn, than we make.

LEVI WILSON.

Trafalgar, New Surry, Feb., 15th, 1842. *Central N. Y. Farmer.*

POTATOES.—LIME FOR MANURE.

Mr. Silas Thayer, of Sharon, informs us that he planted Potatoes last season on green sward, without manure. The land had been in pasture sixteen years without ploughing. The soil, a sandy loam. When the Potatoes came up he applied nearly half a pint of lime to a hill on a part of the land. The lime was air-slacked, and had been long in that state; it was applied by throwing on and around the plants, as convenient. Where the lime was applied, the crop was one-third larger than on other parts of the land treated in like manner, and the seed the same. [*Farmer's Jour.*

MOLASSES FOR NEGROES.

Now that molasses can be obtained so cheap, our planters would find it decidedly advantageous to use it to considerable extent, as food for their negroes; particularly if they have many children growing up. Negroes relish molasses highly—find it highly nutricious and do with half their usual quantity of meat when they are supplied with it. Molasses cannot too but be more wholesome for the summer than the quantity of meat generally given. [*So. Western Farmer.*

For the Southern Agriculturist.

ON PLANTING CORN.

Mr. Editor,—As some return for the valuable information often derived from your Journal, I send you an account of some experiments made in the planting of *Flint* corn. Having but a small farm, they were made with the hope of devising some method to obtain from a few acres, what usually many are necessary to produce.

1st Experiment. On the 11th March, 1841, a half acre of ground, on which a crop of Ruta Baga Turnips had been previously grown, was manured broad cast with 60 cart-loads of manure, procured indiscriminately from the city—ploughed in, harrowed and cross-harrowed, making it level, thoroughly broken up, and pulverized. At the distance of 4 feet, double drills were laid out, 12 inches apart, that is, from the centre of the drills to the centre of the next drills, it was four feet. The corn was planted 10 inches in the drill dioganally, three to four grains being thrown in each hole to secure a good stand, and as soon as sufficiently grown, thinned out leaving a single stalk in each hole; when about a foot high, the alley-ways were broken up thoroughly by a cultivator, and the grass and weeds in the interval of the stalks cleaned out by the hoe. The growth was vigorous from the fine preparation of the soil—and the earth was soon so effectually shaded as to prevent the growth of grass and render *any more* working unnecessary.

For six weeks, from the latter end of April to the beginning of June, a continual drought prevailed at this critical period of its tasseling and forming the ear. The under leaves, as high as the fifth or sixth, *died*, or in common language *fired*---the upper growth continued healthy, and on the first rain assumed a rich color. The stalks were above the ordinary height, and the ears grew unusually high, and were below the medium size. On no stalk more than one ear, and on many none. It was pronounced by those who saw the crop, a failure—*it had fired*. It produced necessarily from the number of stalks, an unusual quantity of fodder. The crop was gathered in September, and after careful measurement, produced 27½ bushels to the half acre, or 55 bushels to the acre---an uncommon product for our low country.

2d Experiment. Confident from the foregoing, that with a modification of the distances of the drills and the plants that the double drill system might be adopted to great advantage, even for a general crop, the experiment the last season was repeated. From a portion of my farm, which without manure would not have produced 15 bushels to the acre, and which had been successively planted in corn for several years, and had never received any manure excepting around the stalks at each planting—an *acre* was measured off, leaving to the south-east and west, each an acre to be planted otherwise in corn, so as to exclude the air from the double drill acre, and test whether it would fire. The old corn beds were first ploughed down, and 60 cart-loads of manure got from the city were scattered broad cast on the surface and ploughed in. On the 25th March, it was harrowed and cross-harrowed---thoroughly broken up and put in fine tilth---the distances as formerly, 4 feet---double drills 15 inches apart, and the corn planted single stalks 18 inches apart, diagonally in the drills. The seed without being selected, was soaked in a solution of 1 pound of saltpetre to 6 quarts of water for 12 hours previous to planting, and then rolled in plaster; the effect of which was, notwithstanding the dry weather, it came up quickly without a failure, and was untouched by the worms. From the fine condition in which the soil was put previous to planting, the growth was rapid, and the ground kept clean; when sufficiently strong, the plants were thinned out, and when about a foot or 18 inches high, the cultivator was passed through, breaking up the surface so as to give a free admission of the atmosphere to the roots without cutting them, and the small growth of grass between the stalks cleaned out by the hoe and hand. The earth was soon overshadowed, the grass prevented from growing, and no other working was necessary. The season was different from the last in having continual rain---the stalks were taller and larger than in the first experiment, the ears grew higher, on each stalk, one, on some two, and on many none; the *heaviest growth* and largest ears were in the *centre* of the acre. Where the manure *chanced* to be strongest, the under blades burnt or fired, but the upper continued throughout of a rich lively color. A heavy quantity of fodder was taken off, and on the 25th of August, the crop was gathered and measured in the field---the product 67 bushels and 18 quarts to the acre.

3d Experiment. On the three acres to the east, south and west, of the double drill acre, the *single* drill method was tried, the distances 4 feet, the corn 18 inches, in the drill single stalk. The ground *previous* to planting, ploughed up, harrowed and cross-harrowed---the seed soaked in saltpetre and rolled in plaster. The same mode of cultivation was adopted as given to the double drill acre. Two of the acres had the previous season been planted in corn, and the only manure given, was a double handful of stable manure around each plant, and the earth hauled up sufficiently to cover it. The remaining acre having been manured for a crop of rye, which had been taken off---no further manure was given, and the stubble ploughed in---all planted *flat without beds*. The produce was 36, 40 and 44 bushels, or an average of 40 bushels to each acre. From the foregoing experiments, I have every confidence in the superiority of the drill system, more particularly the *double drill*, and planting *flat*, over the ordinary method in our low country, viz: listing down and bedding and planting 5 by 4, or 4 by 4, two stalks close together. A few comparisons of the two methods will sustain the opinion. An acre planted 4 by 4, 2 stalks will give the result of 5,400. Allowing the produce to be one good ear to each stalk, and two gills of shelled corn to each ear, the yield will be 42 bushels to the acre. The single drill method, 3 feet distant by 18 inches in the drill, will give 7,280 plants, and allowing the same ratio of product, the result would be 57 bushels to the acre. In the latter method, the plants being placed *apart*, are more likely to yield better and produce larger and more numerous ears. With no particular care, I have shown that 3 acres produced an average of 40 bushels each.

But adopt the double drill method, extend the distances to 4½ feet, and the plants 20 inches in the drill, and it would give 12,096 plants to the acre, giving more than a *double* chance over the method 4 by 4, two stalks for a crop. Allow the same ratio of product and it will give 95 bushels to the acre. The fear of *firing* from planting so close may still be an objection. Then adopt 5 feet drills 2 feet apart, plants 2 feet diagonally in the drill, and allow but *one* ear to each stalk, and two gills to each ear, and your crop will be 68 bushels to the acre.

The great impediment to adopting the double drill method. will be the apprehension of *firing*, but I think the experiments made would show it to be groundless. The growth, it will be observed, was best in the *centre* of the acre, and the acre enclosed by 3 acres, so as to give it no greater chance of air than if situated in the midst of a large field of corn. The *firing* of corn, in nine cases out of ten, is caused, not from want of *air*, but from want of *food*, literally it is "death by starvation," from being stinted of manure and the soil not *properly prepared previous* to planting. The burning of the under leaves was not *firing* "in the usual acceptation of that term." They *died* or *decayed* for want of *light*, which is essentially necessary for the leaves of all plants, to perform their proper functions. The dense growth above excluded the light below, and failing this, they died.

Again, the corn was planted *flat*, admitting of being more easily and effectually cultivated than in the bedding system, which cannot be defended on *any proper principles*. The plough was only used in the *preparation* of the soil, and if this be well done, such will be the early growth of the plants, that serious injury will arise in disturbing the lateral roots if used after planting. The cultivator on the contrary, gives no disturbance to the roots, opens the surface, and gives a free admission to the atmosphere. A flat surface is also more likely to retain a proper moisture than beds.

That the low average crop of this truly noble plant, is a reflection on the Agriculturists of our State, most will admit, and that it is well worthy of more attention, few will deny. Even with the slovenly cultivation that is practised, the value produced in the State, at 50 cents per bushel, is equal to the cotton crop near 7½ millions of dollars. By improved culture, it can be increased fifty to a hundred fold, and I will not stop to enumerate the great benefit of such a result. It is only by *experiment* that old methods can be proved to be good or bad, for it was only by *experiment* the knowledge of them was first procured. In the words of a distinguished writer, "Nature speaks to us in a peculiar language, in the language of phenomena; she answers at all times the questions which are put to her, and such questions are experiments."

Respectfully, B. R. Smith.

[Note.—Several experiments have been made in the culture of corn this season, on Cooper River. An account of one of them we have by us, and have been promised others. These we will endeavor to give together in our next Number.—Ed. So. Agr.]

HORTICULTURE.

THE KITCHEN GARDEN.

[As mentioned in our first note, we re-publish this small work entire, and without alterations of any kind, but it will be born in mind by our readers, that th se directions are intended for the climate of England, which is cooler and moister than ours in summer and colder in winter, which necessarily occasions a change in the times of sowing and cultivating certain vegetables, such as turnips, cabbages, &c The season for performing these operations also vary; and we refer our readers to the calendar published in the last volume of the Agriculturist for particular directions as to time, and we will only observe, th t as a general rule, the spring operations should be performed in a month earlier, and the fall, a month later, than indicated in this work, that being about the difference in our climate.—Ed. So Ag.]

THE KITCHEN GARDEN.

A hand book for Cultivators, containing full directions for the profitable culture of all kinds of culinary Vegetables. By James Main, A. L. S., author of "Flowers," and "Fruit Trees."

(Concluded.)

POT, SALAD, AND MEDICINAL HERBS.

In every well laid out and well arranged kitchen-garden, there is always what is called an *herb border*. That chosen for the purpose, is one of the least useful for more valuable crops. A north or east aspect is suitable enough. It is divided into beds three or four feet wide, with alleys between; and as there are two description of herbs, namely, perennials and annuals, each are placed together for culture.

The perennials are, 1, Parsley, *(apium petroselinum,)* which is indispensable in a kitchen, and therefore found (and often sown as an edging to borders) in every garden. The curled leaved sorts are most valued: and though parsley may be sown at any time, it has been observed, that the sowing as soon as it ripens seed, is the best season to secure a supply throughout the year. The leaves are sometimes very scarce in spring, owing to the plants having been cut over in the autumn, and the leaves exposed to the frost and withering winds of the winter and spring. It is well therefore, to preserve the old leaves as a protection to the young ones during winter, or to defend the crop by coverings of some kind or other against severe frost.

2. Tarragon, *(Artemesia dracunculus.)*—A fine aromatic herb, used in cookery, and in salads; propagated by transplanting the roots, which are perennial.

3. Sorrel, *(Rumex acetosa.)*—is used as a pot herb, as well as in salads, and for garnishing. There are two sorts, the round-leaved French, and the common long-leaved, which last is most in request.

4. Thyme, *(Thymus vulgaris.)*—A fine sweet scented under-shrub, much used for many purposes in the kitchen. It is raised from seed sown in the spring, or by division of the root or by cuttings. There is another species or variety called lemon-thyme; which is preferred for some particular purposes of the cook.

5. Mint, *(Mentha viridis.)*—Green or spear mint, useful for salad, and a seasoning herb for many other purposes in the kitchen; increased by division or by cuttings.

6. Peppermint, a species or variety of the foregoing, cultivated and propagated in the same way, It is chiefly grown for distilling, a useful medicinal water, and an oil being obtained from it when at full growth.

7. Balm, *(Melissa officinalis)*.—An aromatic herb, used either green or dry, for tea and other medical purposes, and increased by division or cuttings. It is cut for drying when in full flower.

8. Burnet, *(Poterium sanguisorba)*.—The leaves are used in the kitchen and in dressed salads.

9. Chamomile, *(Anthemis nobilis)*.—A creeping aromatic herb, the flowers of which are much used in domestic medicine; increased by division. The double flowering is most commonly cultivated.

10. Chives, (*Allium shœniprasum*) —A small species of the onion family, and used in salads and in soups. It grows in tufts of many together, and is increased by division.

11. Fennel, *(Antheum fœnniculum)*.—A large aromatic herb, much in request when mackerel are in season; increased by seeds, or by offsets from the old roots.

12. Hyssop, (*Hyssopus officinalis*).—A small evergreen aromatic under shrub, the tender points of the shoots sometimes used by the cook, but chiefly for medical purposes; increased by slips or cuttings.

13. Lavender, (*Lavendula spica*).—A half shrubby evergreen aromatic plant, cultivated for distilling, and for the fine scent of the flowers; propagated by cuttings planted in a shady border in May. Lavender edgings or hedges to walks are common.

14. Marjoram, (*Origanum Heracleoticum*).—Winter marjoram is a common pot-herb, used for seasoning soups, &c., propagated by division of the roots.

15. Pennyroyal, (*Mentha puligium*).—An aromatic creeping plant, used in cookery, and for distilling; it is increased by slips, and is most luxuriant on damp or well watered ground.

16. Rue, (*Ruta graveolens.*)--A perennial evergreen under-shrub, a medical plant, useful to housewives.

17. Sage, (*Salvia officinalis.*)—An evergreen under shrub, the leaves indispensable in cookery. There are four varieties, namely, the common red, green, small leaved green, and the broad-leaved, or balsamic. They are all easily propagated, by slips planted in May or June.

18. Savory, (*Saturaja montana.*)—Winter savory is a useful aromatic under-shrub, propagated by slips planted on a shady moist border, in spring, and beded out at foot distances afterwards.

19. Tansy, (*Tanacetum vulgare.*)—A strongly flavoured aromatic herb, used for various purposes in domestic economy.

20. Wormwood, (*Artemesia absinthium.*)—Is a powerfully bitter plant, used in domestic medicine; there are four species, all increased by slips.

ANNUAL POT HERBS, REQUIRING TO BE SOWN IN SPRING.

1. Basil, (*Ocymum minimum.*)—A rich scented aromatic herb, used for seasoning. There are two sorts, both so tender as requiring to be raised in hot-bed heat in spring, and planted out on a warm border in May; used green or dried; seed ripe in autumn.

2. Borage, (*Borajo officinalis.*—The young tops and leaves used in salads or to flavour certain drinks, as negus, &c. Sown in spring, where it is intended to remain, and thinned out to eight or ten inch distances.

3. Carraway, (*Carum-carui.*)—Grown for its seeds, which are highly aromatic, and much used in confectionary and in medicine. Sow in drills or broad cast, thinning the plants to ten-inch distances. This plant is a biennial.

4. Chervil, (*Scandix cerefolium.*)—An aromatic pot and salad herb. It is usually sown in drills in autumn to stand the winter, and at several different times in summer to keep up a supply, as it quickly runs to seed.

5. Clary, (*Salvia sealrea.*)—Is a biennial aromatic herb used in domestic economy; raised from seed sown in spring, and transplanted in summer in rows twelve inches apart.

6. Coriander, (*Coriandrum sativum.*)—Is a favorite aromatic herb; its leaves are variously used in cookery, and its seeds in confectionary; sowed at various times throughout the summer.

7. Corn Sallad, (*Valeriana locusta.*)—A small native plant, commonly called Lambs-Lettuce. It is chiefly used as a winter and spring salad from sowings made in August and September.

8. Dill, (*Antheum graveolens.*)—Is a biennial somewhat of the nature of fennel; it is sown in autumn or in the spring of every year, in drills or broad cast thinly.

9. Fenochia, (*Antheum segetum.*)—Annual dill, an aromatic herb; the fleshy stem is eaten sliced in salads, and in soups from June till November; raised by several sowings during spring and summer; transplanted in trenches to be earthed up at bottom.

10. Marjoram, (*Origanum marjorana.*)—The sweet summer, or knotted marjoram, is a fine aromatic herb, and indispensable to the cook; raised from seed sown every spring on light soil, and when full-grown is pulled, dried and stored for winter use.

11. MARIGOLD, (*Calendula officinalis.*)—Is cultivated as a pot-herb; it is sown usually in the spring to stand for good or transplanted at twelve-inch distances. There are three varieties; viz., single orange, single lemon, and double flowered.

12. PURSLANE, (*Portulaca oleracea.*)—Is a small succulent herb, and so tender that the first crops are raised in hot-beds; but in summer the seed may be sown in drills on a warm border, at two or three different times to yield a succession for salads.

13. SAVORY, (*Saturoja hortensis.*)—Summer savory is one of our common herbs, and much used in the kitchen. It is sown in March, and is fit to gather for drying in October.

LIST OF CULINARY SEEDS AND ROOTS OBTAINABLE IN SEEDMEN'S SHOPS.

PEAS.

Auvergne
Bishop's new early
Early single blossom frame
Early nimble do.
Early double do.
Early Charlton do.
Dwarf marrow
Early Warwick
Groom's supurb dwarf
Large tall marrow
New green do.
Knight's tall do.
——— dwarf do.
——— tall green do.
——— dwarf green do.
——— new early, do.
Dwarf Sugar
White Prussian
Blue Prussian
Royal Dwarf
Improved imperial
Valparaison
New matchless
Nonsuch
Victoria marrowfat

BEANS.

Early or moon
Early mazagan
Early longpod
Sword longpod
Greeen do or Nonpareil
Taylor's large Windsor
Common do.
Green do.
Mumford
Toker
Fan or cluster
Green fan or hog
New royal cluster
White blossom

KIDNEY BEANS.

New royal dwarf
Dun forcing do.
Fulmer's early do.
Early Rachael do.
Thornborn's favorite do.
Chinese do.
Negro do.
Canterbury do.
Black speckled do.
Purple speckled do.
Mohawk do.
Prolific do.
Scarlet, and white Dutch runners

ARTICHOTES.

Globe
Green

ASPARAGUS :
- Reading
- Battersea
- giant
- Grayson's

BEET :
- red
- London fine
- white
- green
- turnip-rooted

BORECOLS :
- tall green or Scotch kail
- green dwarf
- red or brown
- dwarf Canadian

Choux de Milan
Jerusalem kail
Egyptian
Buda kail
Ragged Jack
Brussels sprout, tall
——————dwarf
Cow cabbage or Cesarean

BROCOLI :
- early green
- —— purple
- —— sprouting
- large purple
- dwarf do.
- —— Siberian
- early white
- late do.
- Portsmouth
- white cape or cauliflower
- early purple cape
- new sulphur
- Grange's early cape
- Lewis's improved do.
- Somer's late white
- late dwarf cape
- new dwarf Russian
- Knight's protecting
- Miller's late white

CABBAGE :
- Knight's early dwarf
- Wheeler's imperial
- early nonpariel
- early hope
- —— imperial
- —— Vanac
- —— emperor
- —— dwarf
- —— York
- large York
- Battersea
- East Ham
- London Hollow
- sugar-loaf
- flat Battersea
- Paington
- Drumhead or Scotch
- thousand-headed
- fine red globe
- turnip-rooted
- Braganza

Kohl Rabi green
——— Pitsay or Chinese
——— Atkin's new early

CARROT :
- long orange
- fine Surrey
- short orange
- Altringham
- early horn
- scarlet horn

CAULIFLOWER :
- early, and late
- London particular
- New German
- large Asiatic
- Leyden

CELERY :
- Italian
- solid white
- solid red
- new silver
- Manchester giant
- lion's paw

Celeriac or turnip rooted
Cardoon, Spanish
Chervil, curled
Corn salad
Cress, common
—— fine curled
—— golden

Cress, broad-leaved
—— American
—— true Normandy
Cucumber:
early frame
long frame
Southgate
ridge or hand glass
long prickly
short prickly
white Turkey
Manchester prize
Windsor prize
Keneson's stove
Endive:
green curled
white do
green broad-leaved
white Batavian
fine new do.
Gourds: Various sorts
Leek:
London flag
common
Lettuce:
white coss
hardy do.
green do.
hardy green do
Egyptian do.
brown do.
Bath do.
Florance do.
Brighton do.
New Paris do.
brown Silesia
common white cabbage
grand admirable
Hammersmith hardy green
Malta or Drumhead
Hampton Court cabbage
Tennis Ball
Love Apple:
large red
yellow
cherry or cluster
Melon:
green netted
green citron
early smooth cantaloup
netted Romana
large black rock
Silver rock
scarlet fleshed
green fleshed
Ispahan
new Persian varieties
Mustard:
white
brown
Nasturtium:
tall
dwarf
Onion:
Deptford
Strasburg
white Spanish
Reading
long keeping
large Tripoli
silver skinned for pickles
Welch
Parsley:
plain
curled
extra curled
Hamburg
Parsnip:
common
hollow-crowned
Radish:
early frame
scarlet
salmon
white turnip
red turnip
black Spanish
white Spanish
long white
scarlet round, very early
Rampion:
common
Rhubarb:
Turkey
red
new early red

RHUBARB :
- giant or hybrid
- Myat's Victoria

SQUASH : several varieties

STRAWBERRY :
- red alpine

SALSAFY :

SCORZONERA:

SKIRRET :

SAVOY :
- green curled
- Drumhead
- yellow
- globe
- early dwarf
- late green

SORREL :
- French or broad-leaved
- English or long-leaved

SPINACH :
- round-leaved
- prickly or winter
- new Flanders
- French or mountain

CHENOPODIUM :
- Quinoa

TETRAGONIA :
- expansa or New Zealand spinach

SEA KAIL :
- common

TURNIP :
- early Dutch
- early stone
- early snow-ball
- mousetail or six weeks
- yellow garden
- May's early nonsuch

SWEET AND POT HERBS :

Angelica
Anise
Balm
Borage
Burnet
Basil large
—— bush
Capsicum of sorts
Lavender
Marjoram sweet
———— winter
Rosemary
Savory summer
———— winter
Carraway
Clary
Coriander
Cummin
Dill
Fennel
Fenochia
Hyssop
Marygold
Purslane, green
———— golden
Scurvy grass
Sage
Thyme

ROOTS, &c.

Artichokes
Asparagus
Potatoes, many sorts
Rhubarb of sorts. viz.: Myatt's Victoria, Dulley's Goliah, Buck' early red
Garlic
Shalots
Sea Kail
Tarragon
Mushroon spawn

In the foregoing pages we have given concise descriptions of the various plants cultivated in kitchen gardens; together with the most approved modes of culture, according to rules founded on

practical experience. Aggregately these rules, operations and practices, form a system which is a standard for the guidance at all times and seasons, of the practical man; who, however well acquainted with the general rules, is not always governed exactly by them; for while soils, situations and seasons vary, discretion must be exercised to adapt his operations to these circumstances.

To make the most of any given spot of ground by a succession of the required crops, demands a good deal of attention and forethought. There should be no waste and no want; but at the same time with the consideration, that to obtain a full supply for a family, it is impossible to "have *enough* without having *too much*."

The art of cropping ground, consists in crop succeeding crop, without unnecessary intervals; not only between those of the same kind, but between different kinds. All vegetables which may be used at any stage of their growth, as cabbage, lettuce, onions, &c., may be sown in drills on ground intended for other drilled crops: for soon as the first begins to encroach injuriously on the second, it may be drawn for use. For instance, the ground intended for peas and beans in the spring, may be prepared in the autumn, and immediately planted with coleworts in double rows at such distances as will admit beans to be dibbed, or peas drilled between in January and in February. So also, before bean and pea haulm is cleared away in summer, the spaces between the rows may be dunged, digged, and planted with cabbage, brocoli, or any other winter crop.

By such scheming, together with the facilities afforded by the row culture of putting in intermediate crops, much more may be made of a limited piece of ground than can possibly be raised where broad casting seed prevails.

But the soul and life of kitchen-gardening is keeping the ground constantly in good heart. Dunging annually for every crop, except peas, is the surest way of maintaining the fertility of the soil. For deep rooting plants, the dress should be drenched in; for surface rooting plants, digging is sufficient.

For ascertaining the necessary quantities of seeds for given areas of ground, the following particulars will be a sort of guide to the sower:—

One pint of peas,		sows a drill of	20 yards in length.
One do.	beans, - -	27	do.
One do.	runner, -	36	do.
One do.	dwarf-kidney,	26	do.
One do.	marrow-peas, -	32	do.

One oz. onion, sows fifteen square yards; ½ oz. leek, seven square yards; one oz. carrot, fifteen square yards; one oz. parsnip, fifteen square yards; ½ oz. of cabbage, savoy, borecoli, brocoli, cauliflower, is enough for a seed-bed of four square yards; ½ oz. turnip, eleven square yards; of raddish, eight or ten square yards. To plant a

bed of asparagus five feet by thirty, requires one hundred and sixty roots. An acre of potatoes requires from fifteen to twenty bushels of sets of the ordinary size.

ASPARAGUS.

It will be remembered, by those in this vicinity at least, that Gen. Richardson obtained a premium from the Henrico Agricultural Society, for the extraordinary Asparagus exhibited by him at their fair last spring. Since that time, we have been requested, more than once, to obtain for publication the General's mode of cultivating this delicious vegetable. With this request we have complied in the article below, which was furnished by the General with that readiness which he always displays, to advance the interests of agriculture.

Dear Sir :—I give you, not as you requested, "Directions for Cultivating Asparagus," but as briefly as I can, the manner of cultivating mine; premising that so far as I know, there is no skill or mystery involved in the matter.

The roots (then two years old) was purchased of Mr. John Carter—planted in the month of March, in trenches 1 foot deep, 12 inches wide and 5 feet apart—the crowns of the roots when set in the bottoms of the trenches, so that the lateral roots interlocked, being about 12 inches from crown to crown. Previous to planting, stable manure was spread over the bottom of the trenches an inch or two deep, the roots were then set and covered with about as much earth, well pulverized, and the whole surface kept free from grass and weeds through the year. These were the directions given me by Mr. Carter. By the end of the first year, the trenches were filled up by the ordinary process of weeding, to within 2 or 3 inches of the surface; I cut off the tops, filled the trenches to the surface with stable manure, and very early in the spring drew up the earth so as to form a ridge over each row of roots—the produce was more than sufficient for my family. We cut none after the month of May in the second year, but kept the beds as before, clear of weeds and grass, and in the fall, before the berries began to drop, the tops were cut down and removed.

Finding that by the ordinary method it would require more time and labor to dress the beds than I had to spare, and supposing it would be better to apply the manure near the roots than on the surface, I split the ridges with a single horse plough the next season, running twice on each bed, removed the earth left by the plough with broad hoes, and put in an inch or two of fresh stable manure. The garden line was then set over the centre of each

row of roots, about 12 inches above them, the earth (well pulverized) drawn up to the line, first from one side and then from the other, with hoes, so as to form a ridge or bed 14 or 15 inches high —the line then removed, the bed raked over, and that completed the dressing. The produce was abundant, large, fine and well bleached. I have continued this practice ever since—the beds were never forked, but when they become dry and hard on the surface, a dressing with iron tooth rakes, puts them in good order again.

The crown of the root from which the shoots are thrown up, seems to increase in size every year, buds forming upon buds, which give it a conical shape. I observed that more and more of these crowns are visible and are cut, in every succeeding year's dressing; but it does not appear to injure them. Forking, I suppose, injures them quite as much or more. I observe also, that the lateral root or feeders, have spread across the intermediate space between the beds, and think it highly probable it might be better to apply the manure there than to the crowns. I tried the experiment last spring on a small scale, but without any visible effect, until the tops were suffered to grow up: it was perceptible in them, though it had not been in the shoots cut for the table, probably because the manure was applied too late.

My success in raising this plant, so far as it depended on my own management, is entirely accidental. I never planted, or owned, or dressed a bed of it before—never heard of its being dressed in this way, and adopted the plan at first to save time and labor, which I had not to spare. I have thirty-nine beds (one row of roots in each) sixty feet long, which are usually dressed by four men in a day and a half.

You say that your inquiries of me are for the information of others. Allow me to recommend to them and to you, applications to Mr. John Carter, at his nursery and vineyard near the city, not only for supplies of roots, but as the best authority in every branch of horticulture. I have always succeeded when his advice was followed, and always failed when I neglected it.

Very respectfully,
Your obt. servt.,
WM. H. RICHARDSON.

[*The Southern Planter.*

THE ORCHARD.

AN ESSAY ON THE CULTIVATION OF THE PEACH TREE.

BY R. W. GARDNER, OF WEAKLY.

The peach is a most delicious and healthy fruit when ripe, and either green, cooked or dried, form a very useful and cheap article of food. There are but few specimens of fruit trees that render

more remuneration for the labor bestowed on them, than does the Peach orchard. But to receive a fair and equivalent return for your labor, from the cultivation of this fruit, good management is required, as no doubt exists, that the life of the peach tree can be much lengthened, and its production greatly improved by a proper attention. To throw some light upon this subject, by giving my experience and observation in a plain, practical and comprehensive manner, is the object of my present design.

I have never been an admirer of purely theoretical farming; therefore, I shall particularly eschew theory in this communication, confining myself exclusively to such practical observations, as have fallen beneath my notice, during a personal experience and actual practice of many years.

Nature in the Peach, as in all such cases, has denoted the proper time of planting, which is as soon as the peach falls from the tree, but if the seed is not put in the drills at that time, it should be buried in the earth two or three inches deep until the first of February, at which time small ridges should be thrown up, and the seed deposited, four or five inches apart, and covered two or three inches deep. I would, however, in all cases, prefer to plant the seed in the nursery where it is intended to grow, immediately after the peach season is over.

In order to have fine fruit, much care should be taken in the choice of seed, which in all cases should be taken from the best and choisest fruit.

If a proper regard is taken in the selection of seed, it will in most cases obviate the necessity of grafting. In all cases will the fruit be of the kind planted, and that the maturing and richness of the fruit, is dependent on the quality of the fruit from which the seed is obtained, and the state of its ripeness at the time of gathering the seed, is a fact both undisputable and important to the orchardist. If the seed planted, be taken from fruit not entirely ripe, the fruit will be much later and ripen but partially. Hence early and late fruit. It is obvious, that by this method of selecting seed, the ripening may be retarded or advanced at pleasure, as is evinced by daily observation.

The drills in which the seed is intended to be deposited, should be three feet wide, and as soon as the scion is up four or five inches high, cultivation should commence. This well done one year with the plough, will answer; after which, I would recommend a thin coat of hog's hair, tan bark or straw, spread between the drills, this has an admirable effect of keeping down all noxious weeds and grasses, that otherwise would spring up, besides which it will keep the earth loose and mellow. The second year commence pruning, all but a few of the upper branches should be removed and kept so. After two years if well cultivated, the tree may be transplanted from the nursery. There is some difference of opinion in regard to the proper time of transplanting, some being in favor of February, whereas, others prefer November; this I

would leave dependent on circumstances and convenience, as I have had no difficulty in transplanting at either seasons of the year.

The pit in which the tree is put, should be twelve inches deep, well pulverized manure should first be deposited round the root, and then fill up with the soil; care should be taken to place the tree precisely in the same position in which it stood in the nursery.

There is some difference of opinion in regard to the proper distance, at which the peach trees should be planted apart, for my part I have settled down on twenty feet as a very proper distance. This distance precludes the idea of otherwise cultivating the orchard, which after a few years, would in every case prove injurious. Corn may be grown to some advantage for two years, after which time it will have to be abandoned. Small grain should never be raised in peach orchards, as it is very injurious to the trees.

The land best suited for the peach tree, is neither the very rich, heavy, black, nor a close soil, but medium lands, backed by a rich mulatto clay. Many persons entertain the very erroneous notion, that it is immaterial, on what sort of ground an orchard is laid out, whether the land be rich or poor, level or broken; this is a great error; if the orchard is expected to be profitable, the tree must be treated in a manner to enable it to yield an abundant crop of fruit. The peach tree is a great exhauster of the soil, consequently level lands are best calculated to retain what manure may be deposited or what nature may furnish by the decomposition of vegetable matter. The first year after planting out an orchard, its cultivation in corn, will much promote the growth of the tree, and prove of benefit to the ground, after which, however, the idea of grain growing must be entirely abandoned, and the practice of spring and fall ploughing must be adopted. Should the appearance of the tree indicate a decline before the spring ploughing, some well rotted manure should be scattered over the ground, and turned under; if this be neglected, a thin coat of straw will be found of service, if spread over the surface of the ground in the fall of the year and suffered to remain during winter. The ploughing should be well done, with a two horse plough, at least six inches deep, this will have the double advantage of exposing the earth to the pulverizing influence of the frost, as well as the eggs or the young of any noxious insect that may harbor about the root of the tree.

The length of the peach tree's life, depends much on a proper method of pruning and trimming. If the tree has been properly cultivated, it will bear fruit the third summer after the seed has been planted; for three or four seasons the crop will be abundant, and the pruning knife should be but little used, unless in cases of affected limbs, which at all times should be removed. If sheep or calves have not been allowed to occupy the orchard, there will be numerous young scions spring up around the main stalk, if so, and if the old stalk shows any sign of decay, remove it, and suffer a

portion of the young sprouts to remain, but caution should be taken not to suffer more to remain above the earth than the root can abundantly nourish, otherwise the fruit will be small and insipid. This method of removing the oldest and least thrifty stalks, may be successfully followed for many years. Sprouts will invariably germinate from the stump or root, by which means you will have a succession of young fruitful trees. So long as the trunk of the tree remains smooth, clear of bruises or wounds, the gum cannot exude, consequently no decay takes place, hence no sheep nor cows should be suffered to run in an orchard.

The peach tree has many indefatigable and dangerous enemies, in the shape of small insects, the habits and operation of which, I do not pretend to comprehend. Some writers, speaking of the habits of the Æginea Exortosa, or peach worm, says: "that they deposit their eggs near the ground, and that their first motion is downwards, between the bark and the trunk." If these writers be correct, in regard to the spot where the eggs of this worm are deposited, they are most certainly mistaken in their assertion of the worm's primary downward movement. From personal examination, I am convinced that the insect works upwards between the bark and the trunk of the tree, from whence it perforates to the surface, causing a premature decay to take place. This, in my opinion, has been strengthened by removing such trunks as were affected by this worm, upon which the roots invariably would send forth sprouts, whereas, if the roots had been diseased, such could not have taken place, and no benefit could possibly result from a removal of the stalk. I do not here pretend to say, that in all cases, the upper portion of the tree decays first, but in most cases I found the root perfectly sound, whilst the top evinced evident signs of decay.

There are still other causes, that hasten the death of the peach tree, some of which might be removed, by depositing a portion of unslacked ashes, tobacco leaves and stems around the root; but when decay is indicated by the shriveling or frenching (if I may so call it) of the leaves in the spring and summer, remove the tree, put another in its place for no good will ever come of it. I never knew one reclaimed.

Great diversity of opinion exists as to the proper season for pruning. This may be done at all times, although as the wounds made in the summer heal more quickly, the sap at that time flowing freely, and thereby retarding the growth of the trees less; perhaps that season may be considered most favorable. All pruning should be done with a fine tooth saw and a sharp chisel.

Care should not only be taken to keep all the dead and decaying stalks removed, but that the top of the trees does not outgrow the roots, which often occurs. The roots discharge their office, by sending forth the amount of nutriment imbibed by them; now if there be too great a draft of sap to the tree, then the fruit, suffering for want of nutriment, will be small, illshaped and indifferent.

As I have already said, no small grain should be grown in a peach orchard, nor should calves or sheep ever be allowed to enter them. Early in the season, horses would do no damage in the orchard, but they must not be allowed to remain long, for when the peach begins to form, they feed upon it, which is said to be of injury to them. Hogs may with safety be permitted to inhabit orchards, their habits of lying close to the root of the tree, and their disposition to rub the trunk, are peculiarly favorable to the health of the tree; this species of stock alone should be allowed to occupy an orchard. *The Agriculturist.*

CARE OF APPLE TREES.

Mr. Editor,—Travelling through the United States in 1840, '41 and '42, I observed the apple trees were become very scrubbed, and many of the apples inferior in size and flavor. The inhabitants ascribed these effects to the apple tree worm. I believe they are all mistaken. Why do they not destroy the worms? it is very easy to be done. Lime water, or strong soap suds thrown on them will give them a quietus. I am, however, certain the defect is owing to no other cause than lopping the trees in the month of March and April. Let them alone until after they are out of blossom, and then from that time until the leaves fall, trim and lop them. If you are doubtful of the good effect of this treatment, just try one or two of the worst trees in your orchards, and you will see a great change in less than two years. Instead of putting out suckers, as it is generally called, the trees will grow smooth and thrifty, and the fruit become smooth and fine, with a great increase in size and flavor. I have tried the experiment, and found it to succeed beyond my expectations.

The best manure I ever found for an orchard, is to draw fresh earth from a distance, and throw a few shovels full carelessly near the root of the trees, but not to touch the trunk.

Apples are deemed by many a worthless crop, since the temperance societies have been established. As cider is going out of fashion, try how your horses, cows and swine will relish a feed of those sorts you used to grind up for cider. Apple trees in general, produce the greatest profit for the labor, of any crop produced on a farm, and if well attended, will pay 50 per cent clear gain, on all outlays. B. K. DODGE.

N. E. Farmer & Horticultural Register.

SALTPETRE FOR APPLE TREES.

The Editor of the *Boston Cultivator*, in account of a visit to the farm of Mr. Oliver M. Wipple, of Lowell, Massachusetts, makes the following statement of facts, in relation to the curative proper-

ties of saltpetre, as applied to apple trees. Mr. Physic, of our own State, has sufficiently tested its efficacy, in combination with salt, as to peach trees.

"Mr. Wipple's apple trees in his garden, where he had applied his refuse saltpetre, were never troubled by insects or canker worms, while, in the very adjoining lot, the trees were seriously injured. At length this other lot fell into his possession. He then applied about 200 pounds of crude saltpetre to the acre, and since that time the trees have not been troubled with canker worms, as he positively assured us, and have been equally flourishing with those in the former lot. Crude saltpetre may be had from 4½ to 6 cents per pound."

These facts, if not conclusive as to the remedial virtues of saltpetre, in diseases of apple trees, are sufficient to excite inquiry, and we hope our agricultural readers will bear them in mind, as we doubt not they may be turned to profitable account in the management of fruit trees generally, for we can see no just reason why, if the preservative and curative properties of saltpetre be so effectual when applied to the apple and peach, that they may not prove equally so to the whole kingdom of fruit trees.

[*N. E. Farmer & Horticultural Register.*

TO DESTROY PEACH TREE INSECTS.

A very intelligent writer in the London Gardner's Magazine, who had tried many experiments to preserve the peach tree in health, gives the following as the best composition for this purpose. Take half a peck of unslacked lime, a quarter of a peck of soot, two pounds of soft soap, and one pound of sulphur. Upon these, warm water is poured, till the whole mass becomes of a creamy consistency. This composition is applied to the whole tree—trunk and branches, with a cloth or sponge, as hot as the hand can bear it. The proper time of using this wash is immediately after pruning in the spring. T. F.

The Agriculturist.

MISCELLANEOUS.

FEEDING HORSES WITH CORN.

We have long wished to see the practice obtain among farmers, of having their corn and cob crushed to feed their horses, and we are pleased to learn, that it is working its way to public favor, though with a slower pace than we would like to see it. It has been said, and possibly with truth, that some of the corn and cob crushers do not make the cob meal sufficiently fine to be fed to

horses. But then this difficulty may be obviated, by either causing the cob meal to be passed through a flouring mill, or by boiling it.—Where farmers or planters have a large number to feed, it would justify the expense of a mill in addition to that of the crusher, as both could be worked by the same power; so that, where a gentleman has already provided himself with a horse power for the purpose of thrashing out his grain, the additional expense of a crusher and mill, would be inconsiderable, when compared with the many advantages resulting from their possession. These once purchased, all the crushing and grinding for the estate could be done in wet weather, when the hands could not be engaged out of doors, so that the time thus to be occupied, could scarcely be called a *charge*, as it would only be giving employment to those who would not otherwise have much if any thing to do.

The corn cob, besides the benefit to be derived from its *bulk*, in feeding, which is very great, is known to possess more than one-fourth its weight of *nutritive matter*. By crushing and grinding it into meal then, a value in wholesome food would be gained, which would enable the farmer to sell twenty-five per cent more of his corn crop, or he might, in the same ratio, add that amount to the number of his fatting bullocks, or hogs, and thus increase the amount of his products, and consequently his means for acquiring wealth.

On all estates working ten hands or upwards, the t me of a man, or boy, and a horse and cart, are occupied at least one day in each week going to and from mill; now as all this time would be saved, we think it but fair to assume, that the crushing and grinding ought not to be considered as any additional tax whatsoever except so far as the cost of the crusher and mill is concerned, as the time saved by them, would, at least, counterbalance that expended in the preparation of the food at home; and, therefore, would be so much clear profit to the farmer, a *profit* which would very far outweigh the interest on the cost of these conveniences.

One word more and we will conclude. A *crusher* and *flouring mill* might be so arranged, that the same power would perform both operations at one and the same time. *American Farmer.*

BACON.

What of it?—"It is a fine thing in a family, especially where there is no milk." But it is also of several qualities, as good, bad and indifferent—yet bacon is not a natural, but an artificial product. Strange as it may sound at first blush, and that your readers may all know the complete art of baconizing, and those among them who are "lucky to hogs," it is hoped notwithstanding, that they and their dadys before them have used a different process in bacon making, will be persuaded to try an experiment hinted at herein, and long since tested by the experiments of others as the best mode of mak-

ing the most splended bacon. Westphalia to the contrary notwithstanding.

As it is said by some one noted for culinary skill, that the best mode of roasting a hare, is: "first catch a hare," so in order to make the best bacon, it is first indispensable to have hogs and a goodly number of them, the Berkshires beyond a doubt are the best, but as they are rather thin, otherwise a "*new invention*," and not suited to the views of those sagacious lovers of things which they have always seen and known, and who will agree to nothing in the least at variance with "the stone in one end of the bag and a pumpkin in the other" principle; the Piney woods Grazier crossed with the Wild swamp Rooter if well fattened will do very well provided in all cases, that at two years old they will weigh in full flesh, 150 lbs. nett; for if older they never eat well, prepared in any way, and if less they are not worth the trouble of making into bacon at all. Then after the hogs are well fatened, well killed, well cleaned, and well cut up into heads, jowls, shoulders, chines, hams, and feet—then when the pieces shall be quite cool, salt in the usual mode, and pack on boards; but in hogsheads or troughs is better—leave them in bulk for from two to eight days, according to the state of the weather and other prudential considerations, for the purpose of extracting the blood and other matter contained in the pores and which is expelled by the emunctory influence of the salt—then prepare a pickle by boiling pure water and salt so much as will dissolve and more, skimming away whatever scum may rise to the surface, to which add saltpetre as much as you choose, but one pound to the fifty gallons of the liquid will be sufficient, also any spices you may wish, may be put into the pickle and set away to cool—then pack your hams, shoulders or other parts as closely as may be into water-tight hogsheads, pouring upon them while packing the pickle, so as to keep it near the surface of each layer of the meat, but so as not to obstruct a discovery of the interstices to be filled up by the next course, and so till the hogshead be filled; then raise the brine so as entirely to cover the pork; head up the hogshead closely, and so leave it until you may wish to smoke it; which of course will not be until the meat has thoroughly received the salt and become firm; but it may remain for years in a perfect state of preservation as pickled pork if you desire it. Meat handled in this way never spoils—so far as smoking and drying are concerned, I suppose every one knows that the larger, higher, and cooler the smoke house may be the better—as also the more smoke and less heat the more certainly and safer will your bacon be cured, and therefore the smoke house should be airtight if possible, and the hams and shoulders being in the central part alike distant as far as may be practicable from the roof, the side walls, and especially from the fire—for creating and continually keeping up a strong smoke, and one that of itself has a powerful tendency to impart a pleasant flavor to the meat, pine saw-dust and green hicko-

ry wood should be used—let the smoke be continued throughout the year, more particularly in damp weather, and you may bid flies and every sort of vermin defiance; without the trouble of taking down the meat and packing in any away.

But if you will take down and pack away your meat after it is smoked sufficiently—in doing so, see that it be thoroughly dry and firm at the time of packing away—then if you have preserved dry the ashes of the smoke house, a small portion of them sprinkled or sifted upon each layer of meat while packing, is the best preservative of any other; for many reasons, but this one is good without any other, the strength of the ashes is such as effectually to cook any skipper or insect of any kind that having damped itself with the juice of the meat or otherwise, should get among the ashes; for the damp instantly creates a hot fermentation of the ashes like slacking lime. Let any one try this plan, and if he is not willing to give a certificate of its superiority to any other, I shall be willing to follow his advice for the future. NOVUM DOLIUM.

Agriculturist.

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SHOEING THE HORSE.

Mr. Editor,—The remark of your correspondent at page 318 of your number for May, "That many of us transpose the order of our labors," reminds me of a mode adopted in the shoeing of the horse, which I once witnessed, and which is I believe of importance sufficient to deserve notice in the pages of your valuable and very interesting work. It occured at the town of Croydon, near London, which is well known as the centre of the stag-hunt, so well attended by the whole country around, and especially by the high-bred bloods of London; and where may be seen a field of the best horses in the whole world—many of them worth five or seven thousand dollars.

As I once passed through this town, one of my horse's shoes became loose, and I went to the shop of a smith named Lovelace, to get it fastened; the shoe was nearly new, and had become loose in consequence of the nails having drawn out of the hoof, although they had been clinched in the manner universally practiced. The smith remarked that all the other shoes were loose, and would soon drop off, when I requested him to take them off and replace them; and then did I perceive the different mode which he adopted for fixing them, which I will here detail.

As fast as he drove the nails, he merely bent the points down to the hoof, without, as is customary, twisting them off with the pincers; these he then *drove home*, clinching them against a heavy pair of pincers, which were not made very sharp; and after this had been very carefully done, he twisted off each nail as close as possible to the hoof; the pincers being dull, the nail would hold, so as to get a perfect *twist round* before it separated. These twists

were then beaten close into the hoof and filed smooth, but not deep, or with a view to rasp off the twist of the nail. "Oh ho!" said I, "I have learnt a lesson in horse-shoeing." "Yes," said he, "and a valuable one; if I ever were to lose a single shoe in a long day's hunt, I would have to shut up my shop; my business is to shoe the horses belonging to the hunt, and the loss of a shoe would be the probable ruin of a horse worth, perhaps a thousand pounds; but I never am fearful of such an accident." "Simply because you drive home and clinch the nails before you twist them off," said I. "Yes," replied he, "by which I secure a *rivet* as well as a *clinch*."

The thing was as clear as the light of day, and I have several times endeavored to make our shoeing-smiths understand it, but they cannot *see* the advantage it would be to *themselves*, and guess therefore, *it would never do in these parts;* but if my brother farmers cannot see how it works with half an eye, and have not the resolution to get it put into practice, they ought to see the shoes drop from the feet of their horses daily, as I was once accustomed to do. Now let any one take up an old horse shoe at any of the smiths' shops on the road, and examine the clinch of the nails which have drawn out of the hoof, and he will soon perceive how the thing operates. In short, if the nails are driven home before twisting off, and the *rivet* formed by the *twist* be not afterwards removed by the rasp, I should be glad to be told how the shoe is to come off at all, unless by first cutting out the twist. I am, sir, a constant reader of the Cabinet, and one who has benefited many dollars by the various hints which have been given in its pages.

J. S.

Farmer's Cabinet.

FATTENING HOGS.

Those who wish to be economical in feeding, should begin early. Every farmer who is fattening hogs, should have a cauldron set in an arch near his pen, in which he can boil pumpkins, potatoes, meal, &c., as it will be found much cheaper to feed with boiled food than raw.

Considering the comparatively low value of potatoes and pumpkins, and their great weight, it is better to make them the principal food in fattening, and save the corn, which is a more valuable and less perishable article.

When potatoes are boiled and mashed, they make excellent feed for hogs; if a proportion of pumpkins are mixed with them, they are still better; and if to both a small quantity of corn meal be added, we do not know of any feed with which hogs can be fattened to more advantage.

We know that it is said that pork which is fatted with boiled food is not as hard, and of course the purchaser will endeavor to take advantage of the circumstance; but let hogs be fed in this

manner for the first three-fourths of the time they are fattening, the remainder with meal and corn, and we assure our farmers that they will find a ready market for their pork, and at first prices.

A portion of time spent in gathering up those things, which of themselves are not so marketable, and converting them into food for hogs at this season, will save much that is more directly so, and will prove equally profitable as that spent in raising such crops —for the old adge says, "a penny saved is as good as a penny earned."— *Old Genesee Farmer.*

CAUTION.

With a hog so easily kept fat as the Berkshire, it may be proper to caution those who keep breeding sows against keeping them *too* fat. Sows very fat never breed well—they are more apt to miscarry—their litters will be of smaller numbers—and their pigs more runtish and puny at birth – than if the sow was only in fair order. After the birth you cannot feed too well, to aid the sow to give suck to her litter. Boars too, kept for service, should never be allowed to get out of fair order. Too much fat makes them sluggish, and their progeny will be far less vigorous. *Cultivator.*

SUCCESSFUL MODE OF PRESERVING MILK AT SEA.

In November 1836, a part of the conductor's family being about to sail for Europe, a dozen bottles of milk were prepared for their use, in the following way :—The milk was drawn from the cows immediately into the bottles, the bottles were corked, and the corks secured with wire. The bottles were then laid into a kettle upon some straw, the kettle filled with cold water, and the water heated to the boiling point. The milk was used on the passage, perfectly sweet, except one bottle, which lay in a chest unnoticed till it reached Ireland. and then it was found to be as sweet as when it was bottled in Albany. *Cultivator.*

TO PRESERVE BOOKS.

A few drops of any perfumed oil will secure libraries from the consuming effects of mould and damp. Russian leather, which is perfumed with the tar of the birch tree, never moulders; and merchants suffer large bales of this leather to remain in the London docks, knowing that it cannot sustain any injury from damp. The manner of preserving books with perfumed oil was known to the ancients. The Romans used oil of the cedar to preserve valuable MSS. Hence the expression used by Horace, "*Digna cedra.*" meaning any work worthy of being anointed with cedar oil, or in other words, worthy of being preserved and remembered.

Greenfield Gazette.

ERRATA.

In page 537, nine lines from top, for "with 60 cart loads of manure," read "at the rate of 60."

Payments to So. Agriculturist.—Maj. Charles Parker, 1842; Dr. E Geddings, 1842 and old account; B. J. Howland, 1842; Col. R. F. W. Allston, 1842; William A. Alston, 1842; Francis Withers, Esq. 1842.; Col. John S. Ashe, 1841 & 1842.

French Fruit Trees—Camillas, &c.

THE Subscriber has on hand an excellent assortment of FRUIT TREES, imported by him direct from Paris last Spring, and which he had planted out here. They consist of PEAR, APPLE, CHERRY, APRICOT, PLUM, Madeira WALNUT and JUJUBE TREES. Many of the Pears and Apples blossomed last Spring and some bore fruit. It is therefore *presumed* that a large number will do so the coming season. He also expects in the month of December a further supply of Fruit Trees, Roses &c. from Paris.

He offers also, for sale, Peach, Nectarine & Apricot Trees of American growth; and will also receive orders which will be executed at 10 per cent. on cost and charges, for any discription of Fruit Trees, Ornamental Shrubs, or Plants, from the Nurseries of *Sinclair & Corse, of Baltimore, Robert Buist, of Philadelphia*, or any of those in the neighbourhood of *Boston*.

The prices of the French Fruit Trees vary from $1 to 2, according to the size of the Trees. The American Trees are at from 37 to 75 cents.

Also, remaining from last year's Stock,

A few very fine varieties of CAMILLAS, AZALIAS and other Ornamental Green-house Plants, and a choice collection of ROSES, consisting of Tea, Bengal, Bourbon, Perpetual Damask, &c. He expects also, to receive a further supply of the above at the proper season.

J. D. LEGARE,

No. 81, East-Bay, Charleston.

October 29

Ploughs, Cultivators, Corn & Cob Crushers.

THE Subscriber keeps constanly on hand, Ruggles, Nourse & Mason's best PLOUGHS, which have taken numerous premiums at the North, and which he has sold for the three last years, giving general satisfaction to our Planters; they vary in price from $6 to $10, the first being a light one horse Plough, the last a four horse Plough. Also, Freborn Ploughs, from $3 25, upwards, according to the size. The Cultivators are of the best construction, and now generally used in cultivating Corn at the North.

ALSO.

CORN & COB CRUSHERS, made by Hussey, Murray & Sinclair, with every kind of Implement necessary for the Field or Garden culture, consisting in part, of STRAW-CUTTERS, CORN SHELLERS, HOES, SPADES, SHOVELS, AXES, HATCHETS, DUNG FORKS and DRAGS, SCYTHES, CRADLES, &c., &c.

AND

An extensive assortment of *GARDEN and FIELD SEEDS*, which are warranted to be of the best varieties. Most of these are imported direct from Europe, by the Subscriber,

J. D. LEGARE,

No. 81, *East-Bay, Charleston.*

October 29.